UTS UNIVERSITY OF TECHNOLOGY SYDNEY

Complementary medicine in New Zealand: A health services study of the perspectives and practices of selected complementary practitioners

by Phillip Neil Cottingham

Thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy (Public Health)

under the supervision of
Distinguished Professor Jon Adams
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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Phillip Neil Cottingham declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy (Public Health), in the Faculty of Health at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program.

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STATEMENT OF CONTRIBUTIONS TO JOINTLY AUTHORED WORKS CONTAINED IN THE THESIS

Results from this thesis have been submitted to peer-reviewed journals in three distinct manuscripts that are presented in chapters five through seven. I was the primary author, the determiner of the research question and undertook the analysis of results for each of these manuscripts, as well as creating the draft. The results presented in this thesis have not been published in any other publication.

Support in all of these areas has been provided by Distinguished Professor Jon Adams and Professor David Sibbritt.

I would like to acknowledge the contributions of Jill Dunn and Dr. Ram Vempati of Wellpark College of Natural Therapies who assisted with the development of the study and data collection and are acknowledged as authors in the manuscripts of published papers presented in appendices 5-7.

I take full responsibility in the accuracy of the findings presented in these publications and this thesis.

PUBLISHED WORKS BY THE AUTHOR INCORPORATED INTO THE THESIS

Of the drafted manuscripts contained in this thesis, all three have been published. The list of manuscripts contained in this thesis are as follows:

1. Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2015). The characteristics, experiences and perceptions of naturopathic and herbal medicine practitioners: results from a national survey in New Zealand. *BMC Complementary and Alternative Medicine*, *15*(1), 114.

2. Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2017). The characteristics, experiences and perceptions of homeopaths in New Zealand: results from a national survey of practitioners. *Homeopathy*, *106*(1), 11-17.

3. Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2018). The Characteristics, Experiences and Perceptions of Registered Massage Therapists in New Zealand: Results from a National Survey of Practitioners. *International journal of therapeutic massage & bodywork*, *11*(2), 11-24.

RELEVANT PUBLISHED WORKS BY THE AUTHOR NOT FORMING PART OF THE THESIS

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RELEVANT CONFERENCE PRESENTATIONS BY THE AUTHOR

1. Cottingham P. New Zealand Complementary and Alternative Medicine (CAM) Practitioners: their untapped potential in reducing the burden of chronic disease. International Congress of Naturopathic Medicine; Paris,2014.

Purpose

To examine and interpret data from Mapping the Natural Health landscape survey (MTNHL) to determine how CAM practitioners describe their potential contribution to the NZ Health Strategy (NZHS).

Methods

Descriptive (quantitative) and thematic (qualitative) analysis of data from MTNHL around the self-identified contribution complementary and alternative medicine (CAM) practitioners can make to the NZHS are correlated and integrated with data from other domains within MTNHL to identify the factors that lead to CAM practitioners' effectiveness in contributing to the NZHS.

Results

CAM practitioners (n=268) assess their contribution to NZHS highly, with the main areas being: increasing physical activity (93%); improving nutrition (91%); reducing smoking (70%); reducing obesity (68%) reducing the incidence if CVD (61%); reducing diabetes (56%) and reducing cancer (48%). There is a high proportion of support for registration of CAM practitioners (90%), with some reservations, mainly financial implications and constraint of approach to treatment (n=277). Along with this there is support for some funding from Government (although not full funding). Respondents were asked to assess the medical conditions that they could effectively: reverse progression (n=220); halt/slow/manage progression (n=220). Pain (19%), Respiratory (17%), arthritis (18%), depression (15%), stress (15%) and CVD (9%), all related to chronic conditions, were all identified. On average CAM practitioners spent 77 min with clients (first visit) and 50 min. subsequent visits, indicating a more comprehensive process than the average GP's visit. Most (67%) CAM practitioners have Diploma level qualifications (n=299). Researched evidence has a significant (71%) impact on CAM practice (n=287).

Conclusions

CAM practitioners potentially could be utilised in meeting New Zealand Health Service goals. Given that they have a consultation framework that allows for in-depth investigation of chronic illness, CAM practitioners also are able to effectively deal with chronic illness, either through reversing or halting progression of chronic conditions.

Efficient and effective funding allocation (Government and private) could be used to realise CAM's potential in reducing the burden of chronic disease in NZ.

2. Cottingham P. Naturopathy can make a difference: Characteristics of Naturopathic Practice in New Zealand, An interpretation of data from Mapping the Natural Health Landscape – a Complementary and Alternative (CAM) practitioners' survey. International Congress of Naturopathic Medicine; Paris, 2013. (Abstract not available)

3. Vempati, R., Dunn, J., Cottingham, P., Sibbritt, D., & Adams, J. (2012). P04.81. Mapping the natural health landscape: New Zealand-based CAM professionals survey. *BMC Complementary and Alternative Medicine*, *12*(Suppl 1), P351. http://www.biomedcentral.com/1472-6882/12/S1/P351

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Abbreviations used in this thesis

CHC	conventional healthcare
CI	confidence interval
CM	complementary medicine
EBP	evidence-based practice
GP	general practitioner (registered medical doctors)
IHC	integrative healthcare
MACCAH	Ministerial Advisory Committee on Complementary and Alternative Health
OR	odds ratio
RR	response rate
SD	standard deviation

Abstract

Background

Complementary medicine in New Zealand has a long history, but little is known about the characteristics of complementary practices in New Zealand. Internationally there have been some health services research studies with complementary medicine practitioners, across a range of practitioners. To date, there has not been a study of practitioners ranging across the complementary medicine disciplines of naturopathy, herbal medicine and homeopathy in New Zealand, with one study of New Zealand massage therapists being published.

Methods

This thesis utilises health services research to survey New Zealand complementary practitioners across three disciplines: naturopathy/herbal medicine, homeopathy and massage therapy. Participants were recruited through several New Zealand complementary practitioner organisations and invited to complete an online survey. Data collection was conducted over nine months and analysed using descriptive and inferential analysis. Chi square and Students T-test analytical methods were employed to find associations between variables. Where cell frequencies were too small, categorical variables were collapsed to binary variables.

Results

Two hundred and seventy-nine complementary practitioners responded (a response rate of 32%), including 107 naturopaths and medical herbalists, 57 homeopaths and 115 massage therapists. Mean practitioner professional hours spent per week were: 15 for naturopaths and medical herbalists; 14 for homeopaths; and 18.6 for massage therapists. Research was both valued highly and impactful upon practices by respondents across the three disciplines, with

80% of naturopaths and medical herbalists; 90% of homeopaths and 95% of massage therapists valuing research. No significant associations were found between research variables and practitioner characteristics for naturopaths and medical herbalists. A significant association was found between skills to interpret research and research impact on practice for homeopaths ($p=0.038$) and, for massage therapists, significant associations were found between research value and mean caseload ($p=0.009$), as well as level of academic qualification ($p=0.004$).

Regulation of complementary medicine practitioners was supported by most naturopathic and herbal medicine practitioners (82%), massage therapists (93%) and homeopaths (87%). Integration with conventional care was considered desirable by a majority of naturopaths and herbal medicine practitioners surveyed (83%), with 68% of homeopaths and 79% of massage therapists supporting integration with mainstream healthcare.

Conclusion

This thesis presents empirical findings on complementary medicine practice in New Zealand but highlights the need for further research in the areas of evidence-based practice, education and regulation of complementary medicine practitioners that may contribute to a more integrative healthcare provision in New Zealand.

Chapter 1 Background

This thesis presents findings from a study of complementary medicine practitioners in New Zealand, in the disciplines of naturopathy and herbal medicine, homeopathy and massage therapy.

The background chapter begins with an introduction to the thesis, outlining its content and structure as well as outlining the thesis scope. The chapter begins with an introduction to the concept of utilising health services research as a framework for investigating complementary medicine (CM) practice. The chapter also provides the relevant definitions for the terminology utilised throughout the thesis, as well as addressing significance of the research, with the aims, objectives and research questions identified in detail. The chapter also provides background and insight into CM and integrative health care (IHC[1]), which frames the research and provides context for the subsequent chapters.

1.1 Examining complementary, conventional, and integrative health care

Within the field of CM research there is a small, but growing, body of literature exploring the perspectives of the CM practitioners. Within this literature, exploration of CM practitioners' perspectives and practices as well as the CM practitioners' views and attitudes towards an integrative health care (IHC) provision has had limited investigation. In New Zealand there investigation of CM practitioners' perspectives, characteristics and experiences of delivering CM within the overall health care provision for the New Zealand public is very limited. This thesis will explore CM practitioners' practices in, and views about, delivering health care in the New Zealand environment. The thesis is framed by background contexts of the historical developments in CM and its relationship to conventional health care (CHC) in New Zealand,

[1] IHC is a model of health care that combines conventional health care (the dominant biomedical system of health care) with CM health care provision. A fuller definition of IHC is provided in section 1.2.6.2 of this chapter.

as well as international developments in complementary medicine. The exploration that this thesis conducts will be focused on three selected disciplines within CM. The disciplines are naturopathy and herbal medicine, homeopathy and massage therapy.

These three disciplines have been selected as being broadly representative of CM practitioners in New Zealand. The three CM disciplines are: 1) identified as the most prevalent, with the largest practitioner numbers; 2) a good cross section of CM modalities, with a manual therapy, and two unique complementary health disciplines offering systems of medical care based upon defining principles. Of these two, one discipline is a specific set of practices that are well defined, that is 'homeopathy', while the other, naturopathy and herbal medicine, is a CM discipline that brings together an eclectic mix of practices and treatments. This thesis also compares the results of the study of the practitioners in the three disciplines to aspects of CM provision in New Zealand to international developments in CM and IHC.

1.1.1 Health services research – its contribution to examining complementary medicine

The thesis draws on health services research principles and methods to examine CM practitioners' perspectives and practices across a range of topics with a focus on education, integration with conventional health care (CHC), regulation of CM practice and evidence-based practice (EBP). Chapter 9 (the discussion chapter) will contextualise the perceptions of CM practitioners within the wider purview of the New Zealand healthcare system, investigating the relevant key emergent issues from this thesis, including the relationship CM practitioners have with CHC practitioners, and the barriers and facilitators to this relationship. The thesis also compares the CM and CHC practitioners' views on regulation where such information is available.

The health services research approach has been identified as benefitting CM research, potentially providing 'signposts' for the development of CM and its integration with CHC (Herman et al., 2006).

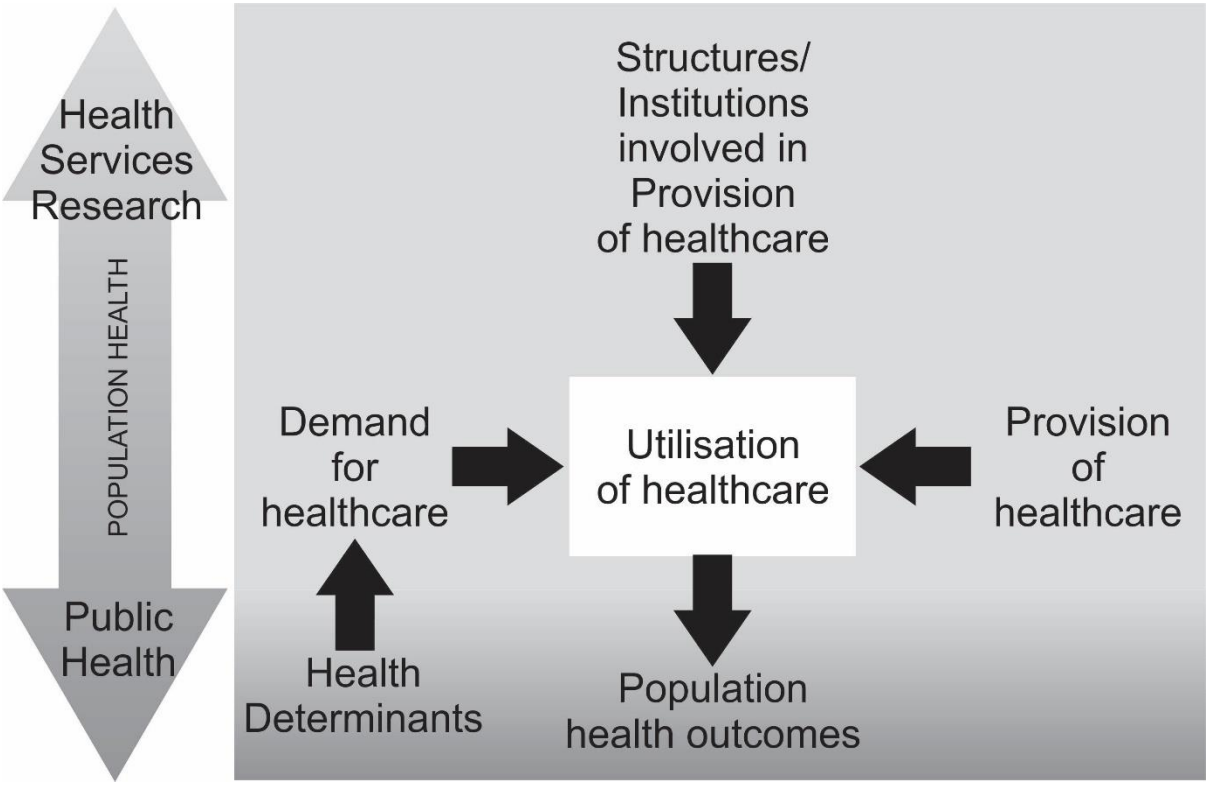
1.1.1.1 Definition of health services research

The health services research field utilises multiple research methods to investigate a variety of areas involving the provision of health services. Definitions of health services research have evolved over time, but the definition of health services research developed by the Board of Directors of the Association for Health Services Research cited below is still holds currency in the field:

> *"Health services research is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organisational structures and processes, health technologies, and personal behaviours affect access to health care, the quality and cost of health care, and ultimately the health and well-being. Its research domains are individuals, families, organisations, institutions, communities, and populations."*
>
> (Lohr & Steinwachs, 2002)

In the above definition, Lohr and Steinwachs identify multiple aspects of health provision. More recent framing of health services research includes identification of the overlap between health services research and public health (Adams & Steel, 2012) and identifying effectiveness of approaches to delivery of healthcare to improve patient outcomes (Robertson & Williams, 2016; Ronnie et al., 2013). Lewis (2011) emphasises the importance of usefulness and applicability in health services research. The elements of the above definitions have been synthesised in Fig, 1 below.

Fig. 1.1 health services research and public health: the spectrum of population health research – adapted from Leyland & Groenewegen (2020)



As illustrated in Fig. 1.1, there is no clear distinction between health services research and public health[2] and there is often a commonality of methods utilised in both disciplines (Steinwachs & Hughes, 2008). health services research can be utilised to inform practitioners and practitioner organisations, as well as policy development, funding decisions and individuals (Steinwachs & Hughes). Inquiry into questions of health provision, such as access, quality of care and costs led to the development of health services research in the 1960s (Bindman, 2013).

Th incorporation of health services research to investigate CM can be said to have started in the early 1900s (Eisenberg et al., 1993) and continued through the 1990s (LaValley &

[2] Although there are some authors who maintain clear distinctions between the various types of health research such as Shi (2008), who views health services research as primarily focused on health resources and health provision as well as population level research.

Verhoef, 1995; Zollman & Vickers, 1999a). Since 2000 health services research for researching CM has gained several proponents who have argued eloquently for utilising health services research to investigate important issues in CM (Adams, 2008; Adams, Sommers, et al., 2013; Coulter & Khorsan, 2008; Herman et al., 2006). The applicability of health services research in CM research reflects health services research's role in evaluating populations and health care practices.

1.1.1.2 Applications of health services research

The health services research approach involves a broad range of research designs and analytic techniques, enabling researchers to estimate the prevalence of the use of health services amongst specialised individuals, groups, or populations, and to evaluate the healthcare delivery/use being accessed by these participants (National Library of Medicine, 2021). Data from large healthcare utilisation databases, patient medical records, and large population surveys are identified as the best sources of data within the context of health services research, due to the large sample size, representative design, and low-cost. These data can be used by health services research researchers to allow a comprehensive and systematic investigation of healthcare utilisation of common conditions (Rohrer, 2014; Schneeweiss & Avorn, 2005). Overall, the evidence provided by the broad scope of health services research is beneficial for investigating the implications of healthcare delivery and policymaking from the perspective of the population, and to expand the current knowledge of healthcare providers with respect to the management of certain health conditions. Furthermore, health services research evidence from a vast range of empirical study designs and focus can also help develop innovations for the CHC healthcare system, which may potentially lead to improved healthcare delivery for individuals (National Health and Medical Research Council, 2014; Rohrer, 2014). This could equally apply to patients of CM but, whilst health services

research may be providing useful information for the provision of CHC, this approach to investigating the effectiveness of the provision of CM is still in its infancy.

1.1.1.3 Health service research approach used for the investigation of complementary and alternative medicine

The health services research approach has been developed with a focus upon conventional healthcare and has been (relatively) rarely applied to examine CM and CM use. Health services research has found to be invaluable in the translation of primary research outcomes from clinical trials in CHC into general practice, which has led to the consideration that, "*Contextual knowledge of primary care is essential for credible and relevant general practice research"* (Manski-Nankervis et al., 2020). It could be that this statement holds true for health services research in CM but, the relatively short time period over which health services research has been applied to CM means that the above statement has yet to be fully tested within the CM context. The purpose of this thesis is to add to the small, but growing, literature on health services research in CM that may assist understanding of CM's effectiveness as a primary health care delivery. Such research may require increased involvement of CM practitioners in conducting health services research within their practices (at least in the data collection phase) or being participants in health services research studies. It has been mooted that CM practitioners could be part of research teams (Lewith, 2004). Complementary medicine practitioners are gradually taking up roles within CM research (Australian Research Centre in Complementary and Integrative Medicine, 2021). This thesis was conducted with a CM practitioner researcher acting in partnership with established researchers (acting as guides), allowing the CM practitioner to explore the field of health services research within the context of a CM framework.

1.1.1.4 Quality issues in complementary medicine health services research

With the popularity of CM use by the general population (World Health Organisation, 2019b) there has been a corresponding increase in health services research methods utilised for CM practitioner as well as CM user studies. A systematic literature review of CM use in Australia (n=64 published studies), found several external and internal validity gaps within the research, indicating a need for attention to the quality of health services research in the CM field (Reid et al., 2016). Another systematic review of CM user studies (n=51 reports of 49 user studies), across several countries, found methodological issues in many of the studies (Harris et al., 2012). Whilst CM practitioner studies may be less numerous than studies of CM use and users, a search across databases and Google scholar located at least 63 studies of CM practitioners and practice, most utilising a health services research approach. (A selection of these studies conducted with the North America, Europe and Australia[3], focused on the disciplines of naturopathy/herbal medicine, homeopathy and massage therapy, and investigating the topics of evidence-based practice; practitioner regulation; education; integration (of CM with CHC) and alignment with governmental public health objectives, is included in this thesis in chapter 2.)

1.1.1.5 Health services research compared to randomised controlled trials: Which is the better fit for CM?

Whilst the randomised controlled trial design can provide evidence of efficacy, there are broader questions that relate to the delivery of CM services that require investigation. The health services research approach is more suited to addressing the need to investigate CM practitioners and practices and their interface with CHC. Health services research can provide a real-world context in which the issues of effectiveness of CM healthcare delivery can be assessed (Adams, Sommers, et al., 2013).

[3] These regions were chosen as having the most similarities to healthcare provision in New Zealand

The contextual areas that health services research is well-placed to investigate include: CM utilisation prevalence; the perceptions of patients and practitioners regarding effective healthcare delivery using CM; reasons for CM use; characteristics of CM practice, including decision-making processes; use of evidence in CM practice and CM practitioners' perceptions of their own effectiveness in delivering CM treatments; CM interface with CHC and the facilitators and barriers of such interface; and broader policy areas related to CM, and how these affect delivery of healthcare through CM (Adams & Steel, 2012). This thesis investigates several of these areas, namely characteristics of CM practice; decision-making processes in CM practice; use of evidence in CM; self-reported effectiveness; CM interface with CHC (referrals between CM and CHC). The White House Commission on Complementary and Alternative Medicine Policy (2002) stated:

> *"The public's increased use of CAM medicine[4] has added urgency to the need to examine the safety and effectiveness of CAM practices and products and to discover the basic mechanisms underlying them. Basic, clinical, and health services research in CAM are essential for including CAM in the mainstream health care system."*
>
> (White House Commission on Complementary and Alternative Medicine Policy)

The above statement implies that health services research is as essential as clinical trial research in the integration of CM into national healthcare delivery. Despite this strong recommendation by the White House Commission, health services research has been underfunded compared to clinical trial research (Herman et al., 2006). Herman et. al. argue that health services research is a "match" for CM, and that the organisation of health services research in CM could investigate the following: the healthcare system (as a whole) and where

[4] The acronym CAM (complementary and alternative medicine) has been used to identify complementary medicine until relatively recently. The acronym CM (complementary medicine) is used in this thesis, as this is becoming the more accurate way to describe the field. (See section 1.3 of this chapter for more details on the definitions of terms used in this thesis.)

CM might interface or have a valued role; provider (CM practitioners and practitioner organisations) information and patient information. This thesis has focused on the 'provider category' within the contextual framework of 'healthcare system'. In Australia, health services research projects investigating CM have attracted government funding, many being conducted through the Australian Research Centre in Complementary and Integrative Medicine, which has a health services research focus, with research conducted in CM use and CM practice (Australian Research Centre in Complementary and Integrative Medicine, 2021).

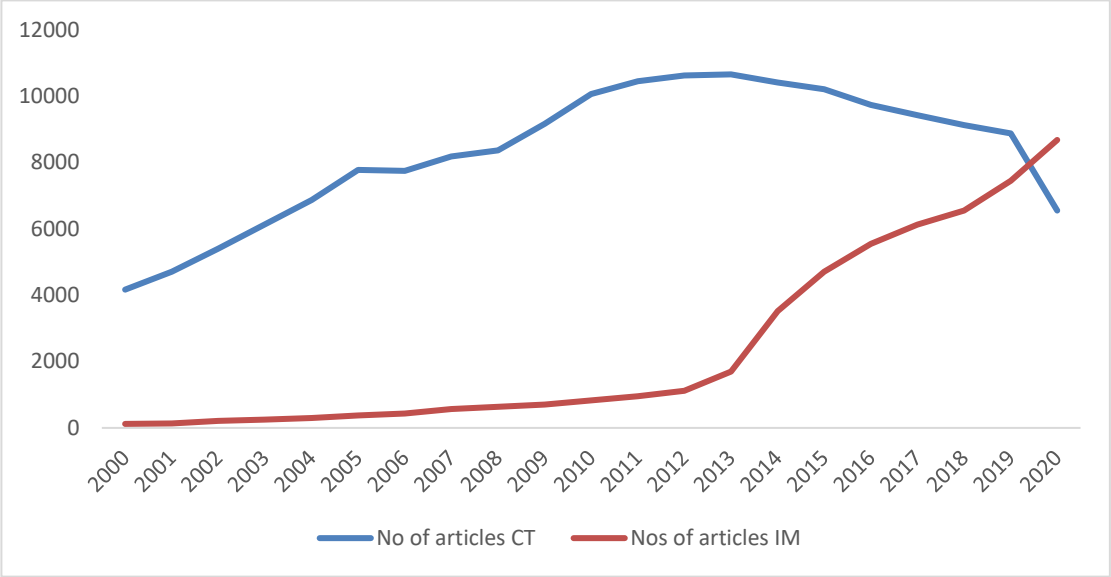
In conclusion the multidisciplinary characteristic of health services research can support the investigation of CM through examining CM practice and practitioners and, as such, is an appropriate research approach to address the research aims and questions of this thesis (see section 1.2).

1.1.2 Current research approaches to developing knowledge within complementary and integrative medicine: Contemporary considerations of research models and frameworks

Debates over what constitutes 'evidence' for CM therapies (and the research approaches that may uncover appropriate and applicable evidence) have been ongoing for many years. This debate has often been accompanied by a 'paradigmatic conflict' over the validity of CM in a modern healthcare context (Coulter, 2004). Increasingly, interest in CM researched evidence has grown and, although debate over the validity of CM has not ceased, there is certainly more CM research being produced currently. Using the PubMED database (National Center for Biotechnology Information, 2020) fig 1.1 charts the progression over time of the number

of occurrences of the medical subject headings 'complementary therapies, and 'integrative medicine[5]' in peer-reviewed journal articles over the past 20 years.

Fig 1.2 – results from a PubMED search using medical subject heading terms related to CM and IHC



(CT – complementary therapies; IM – integrative medicine)

Whilst the trend of articles with complementary therapies shows a gradual, but steady increase up to 2012 and then declines post-2012, the numbers of articles containing the medical subject heading term 'integrative medicine' show a steady upward trend from 121 in 2000 to 8679 in 2020. This trend signifies a growing interest in conducting research into IHC. However, the articles found in the results of the searches do not all report on original research, with many being opinion pieces or reviews of literature. Only 11% of CM articles found in the above PubMED search reported on results of clinical trials, with only 3% of IHC articles found in the above PubMED search reporting on results of clinical trials. However, the increasing trend of publication of CM and IM research indicates that the scientific community (potentially including some CM practitioners) are beginning to conduct research to develop an evidence-base for CM and IHC.

[5] The search terms 'complementary therapies' and 'integrative medicine' were utilised in the search as these are the MeSH terms that PubMED uses, rather than CM and IHC, which are used throughout this thesis.

Proponents of CM have advocated for an evidence-based approach for the delivery of CM within healthcare for the past twenty years (Cohen, 2004; Frenkel & Borkan, 2003; Hunter, Wardle, et al., 2016; O'Brien, 2004; Phelps & Hassad, 2011; Snyderman & Weil, 2002; Weil, 2011; Willis & Rayner, 2013). Empirical studies in CM and IHC have primarily utilised a quantitative, randomised controlled trial approach to researching both CM and IHC. Table 1.1 shows the results of a PubMED (National Center for Biotechnology Information, 2020) search for numbers of publications reporting on three types of study methods for CM and IHC. It should be noted that a search using 'complementary therapies' and 'pragmatic clinical trial' yielded 67 results, whilst a search using 'integrative medicine' and 'pragmatic clinical trial' yielded 1 result. These results indicate that most clinical trials occur within a controlled environment, rather than a real-world environment, which may have implications for applying the results of such trials in CM practice.

Table 1.1 The results of a PubMED database search for search terms related to study type for CM and IM for the years 2000-2020

Search term	Randomised Controlled trial	Survey	Qualitative study
Complementary therapies	18,278	11,648	1354
Integrative medicine	85	47	47

Table 1.1 illustrates the emphasis on randomised controlled trials in research approaches as being the preferred methodology to appraise the effectiveness of CM and IHC. A search of the Cochrane Library for systematic reviews (systematic review) using the term 'complementary medicine' found 142 systematic reviews published since 2000.

The above results of searches in databases (PubMED and Cochrane databases) indicate that researchers have given greater weight to randomised controlled trials and systematic reviews

as methods of assessing effectiveness of CM and IHC. The use of health services research in CM and IHC research has not been as prevalent (as randomised controlled trials and systematic reviews) over the past 20 years. This is evidenced by the proportion of research methods in published trials as compared to survey or qualitative methods. Such under-utilisation could exclude important information about users and practitioners, with interactions between the two groups, potentially shaping the CM professions and their interactions with CHC in a more effective manner. More effective interaction between CM and CHC could benefit the health of populations in New Zealand and world-wide.

1.1.2.1 Research methods that have been utilised in naturopathy and herbal medicine, homeopathy, and massage therapy

A series of searches (of article titles) in PubMED database (for the years 2000 – 2020) were conducted using the medical subject heading search terms: *naturopathy, herbal medicine, homeopathy* and *massage*, combined with the search terms: *randomised controlled trial, surveys and questionnaires,* and *qualitative research*. The results are charted below.

Fig 1.3 Published naturopathic research (PubMED) over the past 20 years by type.

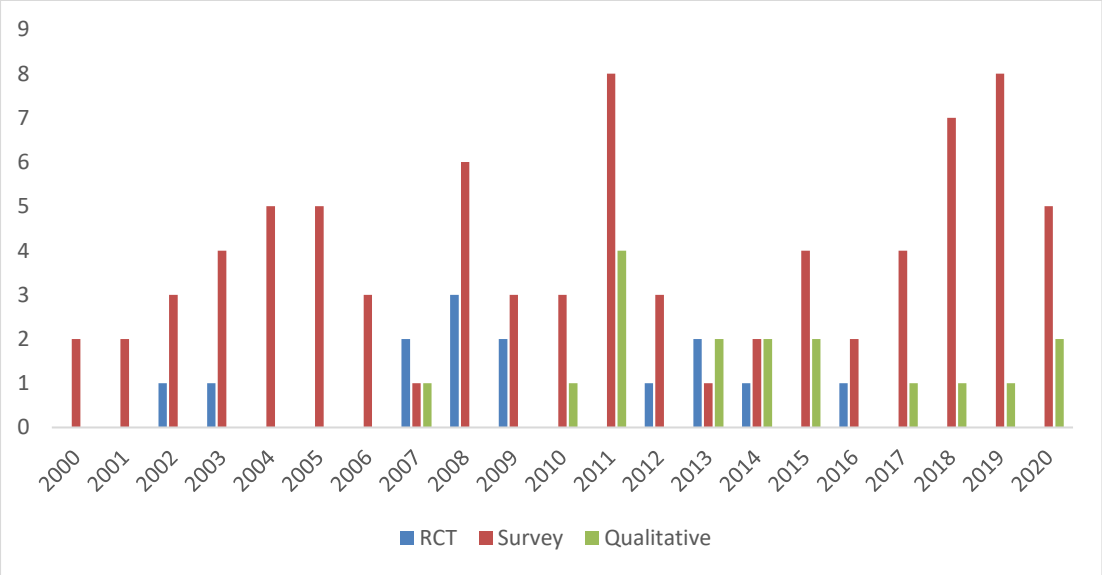


Fig 1.4 Published herbal medicine research (PubMED) over the past 20 years by type.

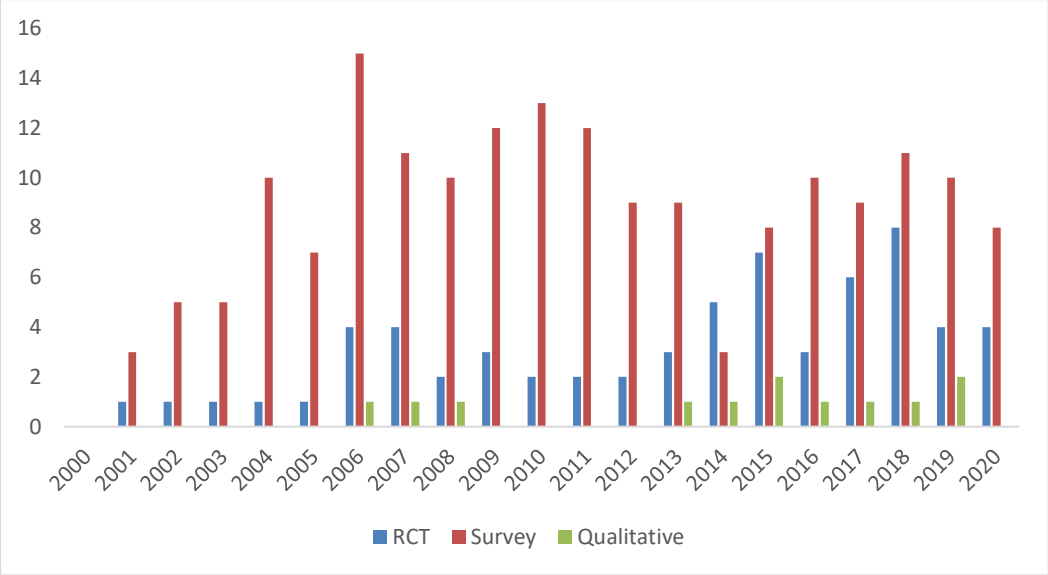


Fig 1.5 Published homeopathic research (PubMED) over the past 20 years by type.

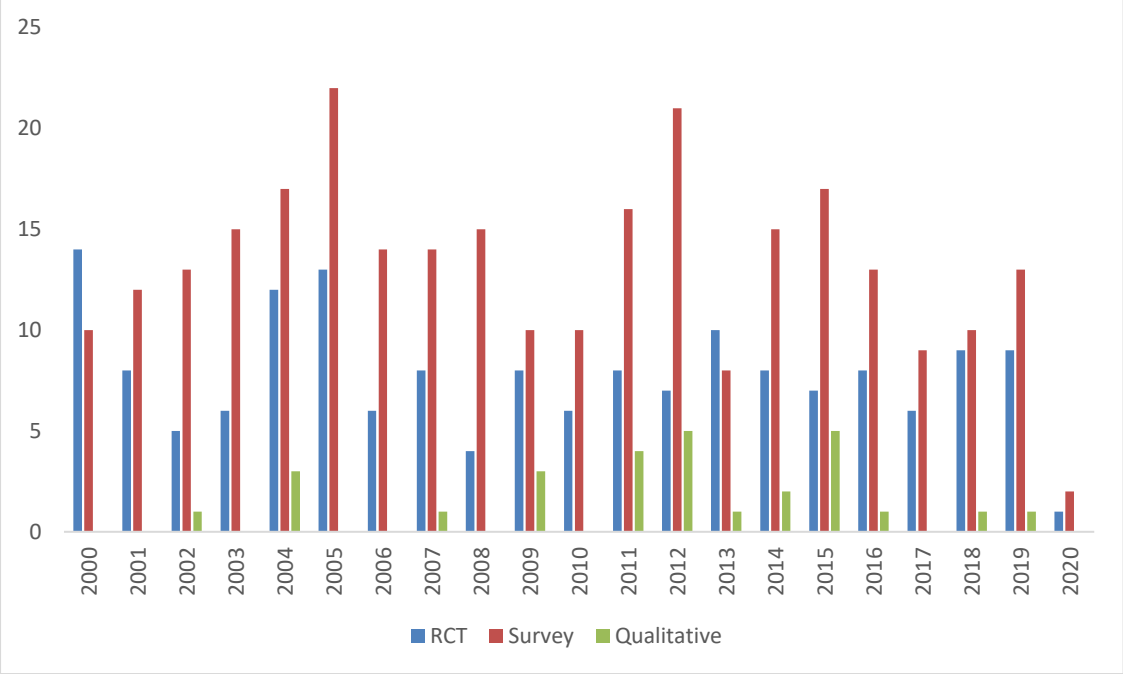
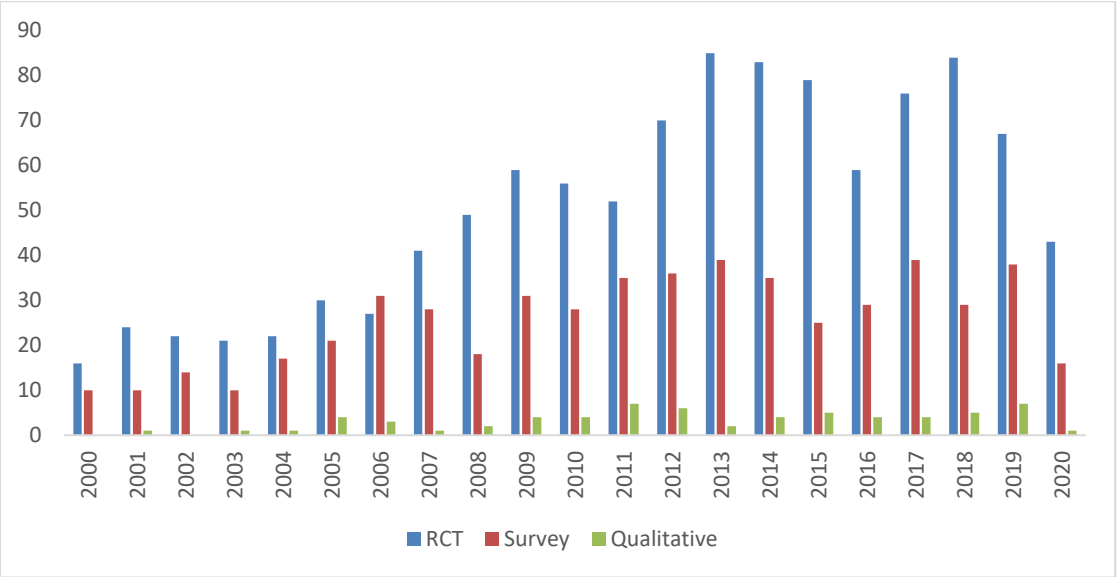


Fig 1.6 Published massage therapy research (PubMED) over the past 20 years by type.



The charts in figs 1.3-6 show a consistent pattern of a predominance of survey research in naturopathy, herbal medicine and homeopathy, with a greater predominance of randomised controlled trials in massage therapy (fig. 6). The predominance of survey methodology used in naturopathy might indicate that the nature of naturopathy, being a multimodality discipline (Steel, Foley, et al., 2020; World Naturopathic Federation, 2017c), could involve the investigation being more complex. The randomised controlled trial may not be suitable in such investigation, as it is generally focused on a single therapy. It is also of note that there may be randomised controlled trials conducted on specific modalities within naturopathy that this search would not have picked up. The small number of randomised controlled trials in the results for herbal medicine might be explained by the use of specific plant names in the titles of research papers in journals, rather than the term herbal medicine.

For homeopathy, the results of this search (predominance of survey research method) may also indicate a complexity within this discipline - potentially the complex and controversial

nature of homeopathic medicines[6] and their application in human health (Aversa et al., 2016; Jonas et al., 2003; Tthenier et al., 2019) for which the randomised controlled trial is not a suitable method for investigating.

The results for massage (fig. 1.6), where randomised controlled trials are more predominant, may be explained by the nature of massage therapy being a discipline with a more singular focus that may lend itself to investigation through the randomised controlled trial method (Field et al., 2007; Kahn, 2002).

The results of the PubMED literature search highlight the small numbers of published articles in the disciplines of naturopathy/herbal medicine, homeopathy, and massage therapy, indicating a need for more empirical investigation of these three disciplines.

1.2 Aims and scope of thesis

1.2.1 Research aim

The aim of this research is to investigate the perceptions and practices of New Zealand CM practitioners in the disciplines of naturopathy and herbal medicine, homeopathy and massage therapy related to their role in the New Zealand health care system.

1.2.1.1 Research objectives

1. Investigate how the CM practitioners': education and qualifications might contribute to their ability to provide effective health care to the New Zealand population.
2. Explore the CM practitioners' attitudes to researched evidence and their use of evidence-based principles in their practices and investigate the factors that influence these attitudes.

[6] The preparation of homeopathic remedies using successive dilution and the application of force to the remedies (see chapter 2, section 2.4), plus the predominant approach being to match the remedy to the totality of symptoms, rather than named conditions, creates a complexity in homeopathy that is not as pronounced in some other disciplines with CM.

3. Investigate the CM practitioners' attitudes related to integration of CM with CHC and investigate the CM practitioners' referral practices to CHC practitioners and other CM practitioners.

4. Explore the CM practitioners' attitudes to regulation and registration of CM practitioners.

5. Investigate the CM practitioners' perceptions of their alignment with the New Zealand Health Strategy.

1.2.2 Research questions

1. What are the characteristics, perceptions, and practices of New Zealand CM practitioners (naturopaths/medical herbalists, homeopaths, and massage therapists) practising in New Zealand?

   Sub-questions

   i. How do New Zealand CM practitioners' education and qualifications contribute to their delivery of health care?

   ii. What are the attitudes of New Zealand CM practitioners towards evidence-based practice and research?

   iii. What practices of New Zealand CM practitioners reflect their attitudes towards EBP and research?

   iv. What are New Zealand CM practitioners' attitudes towards regulation of CM practitioners?

   v. What are the attitudes of New Zealand CM practitioners towards integration with CM and what are the characteristics of the referrals between the CM practitioners and other CM practitioners as well as CHC practitioners?

vi. What are the associations of the attitudes of New Zealand CM practitioners towards evidence-based practice (and research) with levels of educational qualifications, views on regulation of CM practitioners and integration of CM with CHC?

vii. What is the self-reported alignment of New Zealand CM practitioners with the goals of the New Zealand Health strategy?

1.2.3 Significance and scope of thesis

1.2.3.1 Significance of thesis

To date there has been limited investigation of CM practice in New Zealand. Chapter 3 contains a review of the available New Zealand literature on (CM and CHC) practitioners' and CM users' perceptions of factors associated with the provision of CM and IHC health care in New Zealand. The sum of the papers included is 19, of which only 2 present findings of studies of New Zealand CM practitioners. The limited investigation (to date) of CM practitioners' characteristics, practices and perceptions in New Zealand initiated the current study that this thesis reports on. Internationally, a preliminary search of the literature (using the Medline, Cinahl and science direct databases) from 2000 to 2021 found 189 papers (Medline and Cinahl) and 202 papers (science direct) reporting on studies where CM practitioners were participants. (This is a small number compared to studies of CM users/patients, for which a database search - Medline and Cinahl yielded 1,845,927 results.) These results (for CM practitioner studies) are also small compared to a similar search conducted for general practitioners (CHC), which found 6,136 results (Medline and Cinahl) and 41,126 results (science direct). This thesis contributes to the growing literature about the nature and characteristics of CM from CM practitioners' perspectives and practices.

1.2.3.2 Scope of thesis

This thesis investigates a range of factors that are related to the New Zealand CM practitioner's practices and perceptions, through a survey instrument that contained 65 questions organised into several domains, namely:

1. General questions that collected data on practitioners' demographics, location of practice, the characteristics of the CM practitioners' practices.
2. The practitioners' qualifications and clinical practice experiences related to their education.
3. The CM practitioners' perceptions and use of research and EBP.
4. The CM practitioners' attitudes to IHC and referral characteristics (to CHC and other CM practitioners).
5. The CM practitioners' views on regulation and registration of CM practice in New Zealand and sources of funding (if any).
6. The CM practitioners' self-assessed role alignment with the New Zealand health strategy (Ministry of Health, 2000)

1.2.3.3 Rationale for thesis

Worldwide, CM practices and perceptions have been shaped by, and adapted to, the healthcare and regulatory environments of the countries and regions in which the CM practitioners work. However, because a limited number of studies of CM practitioners' characteristics, attitudes, perceptions, or work practices have been conducted, there is insufficient knowledge of CM practice in many countries to result in useful conclusions about CM practice. This is a situation that several organisations have attempted to rectify. The World Health Organisation has produced a global report that provides useful information on

CM within countries, which is based on health services research gathered from all world regions of the World Health Organisation (World Health Organisation, 2019b).

A visual scan of a report from the World Naturopathic Federation (2017b) on published research with authors who are naturopaths (n=1781) found only 3% of the articles have CM practitioners as participants (as this thesis has). Multiple searches of the literature of the past 20 years have been carried out, resulting in no identification of any study of CM practitioners that matched this study, both in the range of CM practitioner disciplines and the types of information included. Searches have identified published studies involving CM practitioners in the disciplines that are studied in this thesis (naturopathy/herbal medicine, homeopathy and massage therapy), and some of the areas of CM practitioners' attitudes, perceptions and practices that are included in this study have been investigated. What is unique to this study is the combination and organisation of the questions asked of the CM practitioner respondents and the appraisal of statistical associations between variables across the domains. Several of these findings may not be possible in other studies that focus on one aspect of CM practitioners' characteristics, perceptions and practices.

1.2.3.3.1 Rationale for inclusion of questions about the nature of CM practice in this thesis

The first domain contained general questions on the characteristic of CM practitioners and their practices. Demographic information is commonly collected in workforce surveys of this type and is useful in assessing the characteristics of survey respondents (Bawah & Binka, 2019; Szabo et al., 2020).

This thesis investigates the practice characteristics of the CM practitioner respondents. The nature of the CM professions is that practitioners often work in diverse settings (Ang & Wilkinson, 2013; Steel, Leach, et al., 2018; Wardle et al., 2015). The findings of this thesis

may assist general understanding of CM practitioners' characteristics that could have an influence on the CM practitioners' practices and perceptions, particularly regarding integration of CM into national healthcare services, but also their alignment with public health goals.

CM practitioner caseload data was included in the survey. Average caseloads per month have been used in some CM health workplace studies (Smith et al., 2011b; Wardle et al., 2015) and provide information that indicates the levels of usage of CM practitioners within a healthcare context.

1.2.3.3.2 Rationale for inclusion of questions about quality and levels of education of CM practitioners in this thesis

Data collected about the CM practitioners' education was considered useful, particularly for informing educational institutions about how education shapes the CM workforce and how this may influence the design of educational programmes, but also to inform policies within the CM practitioner professional organisations, as well as government agencies, including the New Zealand Qualifications Authority and the New Zealand Ministry of Health. The importance of gathering information about quality in CM education, particularly in relation to the knowledge and skills (as well as attitudes) of graduates entering the profession, has been highlighted by Wardle, Steel and Adams (2012), who argue that private educational institutions in Australia need to be made accountable by government agencies that fund CM education within such institutions. The situation is similar in New Zealand, and chapter 8 of this thesis contains relevant information regarding CM education collected from the CM practitioner respondents in this thesis.

Internationally, education in CM has diverse characteristics, qualification ranges and lengths of programmes, although in some world regions there have been attempts at standardising

educational programmes in aspects such as length of programme, content and accreditation (Australian Register of Naturopaths and Herbalists, 2019a, 2019b; Baskwill et al., 2020; Caldwell, 2017; Dunn et al., 2021; Menard, 2014; World Naturopathic Federation, 2017c). Chapter 2 reviews CM education across selected world regions, and chapters 5- 8 contain findings of this thesis related to specific areas of CM education.

Some work-force studies of CM practitioners in unregulated, or un-standardised, national or state environments[7] have included questions on educational qualifications (Ang & Wilkinson, 2013; Antimo, 2012; Aucoin et al., 2019; Bensoussan et al., 2004; Braun et al., 2011; Casey et al., 2008a; D. C. Cherkin et al., 2002; Gerontakos et al., 2021; Leach, 2013; Makich et al., 2007; Malhotra et al., 2020; Nissen, 2010; Steel & Adams, 2011c; Steel, Schloss, et al., 2020; Wardle et al., 2019), as does this thesis.

Of the articles cited above, only one article applied inferential statistics to determine if there was an association between level of education and other variables (Braun et al., 2013). This thesis analyses associations between level of education of respondents and attitudes to EBP and research as well as referrals between complementary medicine practitioners (CM practitioners) and conventional health care practitioners (CHC practitioners). The value of determining associations between CM education and shaping CM practices can be investigated through the appraisal of knowledge translation[8] (Tractenberg & Gordon, 2017). This thesis assesses the application of EBP in CM practice through appraising the sources of knowledge that CM practitioners self-report that they utilise (see chapters 5-8) and methods of determining patient outcomes.

[7] Educational qualifications would not be a unique variable in regulated and standardised national or state environments.

[8] Knowledge translation has been defined as the application of research into practice (Straus, Tetroe & Graham, 2009). In this case, the way in which CM research is utilised in CM clinical practice.

CM education (qualification level, content and characteristics) is a critical factor in shaping CM practice and CM practitioners' attitudes and perceptions, and is under-investigated, as evidenced by the small numbers of studies that have focused on this important area.

1.2.3.3.3 Rationale for the inclusion of questions about the complementary medicine practitioners' attitudes to and practices related to integrative health care

Current international evidence for the application of IHC in health care provision is still developing, with some investigations and evaluations having been completed, but crucial questions remain regarding the usefulness of an IHC approach in providing effective health care for populations.

A search across several key databases (PubMED, CINHAL, AMED and Science Direct unearthed few studies that have been conducted where CM practitioners are asked their views on IHC. Klimenko, Juilliard, Shu Hua and Lu (2006) conducted a survey, which included CM practitioners and their views on the importance of integrating with conventional care. A qualitative study in California investigated CM practitioners' attitudes and behaviours towards integrative medicine (Hsiao et al., 2006). This was followed by a 30-question survey which compared attitudes of practitioners to IHC between two CM modalities (acupuncturists and chiropractors) and primary care physicians (Hsiao et al.).

Another United States study also explored CM practitioners' attitudes to integration with conventional medicine and how the CM practitioners envisioned IHC might work best from their perspective (Barrett et al., 2004). The linking of attitudes towards IHC from CM practitioners was studied qualitatively in Israel, but the focus was more on cultural aspects (Arab physicians) than general attitudes towards integration (Popper-Giveon et al., 2014). An Australian study of naturopaths and herbalists investigated IHC as a consequence of statutory registration but did not provide specific data on the practitioners' attitudes to integration with

conventional care (Braun et al., 2013a). A qualitative study conducted in Uganda was designed to elicit data on CM practitioners' attitudes to IHC, but the reporting available contains little information about this aspect of the study (Amos Deogratius et al., 2018). In India, an exploration into attitudes and experiences of integration by CM practitioners, was conducted qualitatively, identifying facilitators and barriers to integration within the health care system (Nambiar et al., 2014). Gray and Orrock (2014) also conducted a qualitative study, which explored CM practitioner attitudes to IHC and how these influenced the practices within IHC in the United States. (Chapter 2 contains results of a review of international studies of CM practitioners related to CM practitioners' attitudes to IHC.)

Related to IHC, referrals between CM and CHC practitioners is an important aspect of IHC that this thesis investigates.

1.2.3.3.4 Rationale for the inclusion of questions about the CM practitioners' referrals to CHC and other CM practitioners

An extensive search of literature about studies of CM practitioners found limited information on referrals between CM and CHC practitioners. Whilst some studies have explored the communication between CM and CHC, most of these are centred on the patient-physician communication (Barraco et al., 2005; Eisenberg, 1997; Featherstone et al., 2003; Robinson & McGrail, 2004; Shelley et al., 2009; Sidora-Arcoleo et al., 2008; Tasaki et al., 2002; Thomson et al., 2012), and most conclude that information (for CHC practitioners) about patients' CM use is critical to effective patient-physician interpersonal relations and patient treatment. Little work has been done to explore direct communications between CHC and CM practitioners. A descriptive study in New South Wales, Australia examined how CM practitioners functioned within an integrative practice. This study included referrals between CM and CHC practitioners (Grace et al., 2008). Adams (2004) has identified that there is lack

of initiatives by CHC practitioners to interface with CM. Gray and Orrock (2014) conducted a qualitative analysis of practitioner perspectives (one GP, one osteopath and one naturopath) about their experiences of CHC CM practitioner interactions, including referrals. Another qualitative study explored United States counsellors' experiences in referring to CM practitioners (Gamby et al., 2020). A number of other studies have explored referral from the perspectives and practices of CHC practitioners (Adams et al., 2011; Berman B, 2002; Berman et al., 1999; Brien et al., 2008; Griffin et al., 2016; Hall et al., 2015; Hamilton, 2003; Jenkins et al., 2015; Kundu et al., 2011; Liem & Newcombe, 2017; Nerurkar et al., 2011; Shorofi & Arbon, 2017; van Haselen et al., 2004a; Vlieger et al., 2011; J. Wardle, J. Adams, et al., 2013; J. Wardle, David. Sibbritt, et al., 2013; Wyllie & Hannaford, 1998), whilst a few studies have explored referrals from both CHC and CM perspectives (Boon et al., 2009; Hollenberg, 2006; Josyula et al., 2016). One Australian study examined referrals from CM to CHC (Casey et al., 2008a). (A detailed review of the results of selected studies exploring referrals between CM and CHC practitioners in New Zealand is found in Ch3 section 3.8 of this thesis.) Complementary medicine practitioner self-reported referrals between CM and CHC from the New Zealand CM practitioners' practices is investigated in this thesis. It should be noted that referral patterns and mechanisms may be influenced by the model of IHC that is operational in CM and CHC practices. (Models of IHC are explained in the section 1.3.2 of this chapter, definition of integrative health care.)

1.2.3.3.5 Rationale for the inclusion of questions about the CM practitioners' attitudes to regulation of CM practitioners in this thesis

Registration (both statutory or voluntary[9]) of CM practitioners is a topic of much discussion internationally (H. A. Baer, 2008; Boon, 2002; Braun et al., 2013a; Canaway, 2006; Dixon, 2008; European Herbal & Traditional Medicine Practitioners Association, 2014; Lewith et al., 2003; Lin & Gillick, 2011; McIntyre, 2014; Spedding, 2012; Stone, 2005; Wardle et al., 2014).

In alignment with the intention of the Beijing Declaration of the World Health Organisation (2008), has recommended to all countries that there needs to be a regulatory framework and timetable for member nations to regulate CM (World Health Organisation, 2013). Internationally there appears to be considerable support for CM practitioner regulation. A systematic review (n=60 papers reviewed) found that regulation of CM practice was supported by a majority of respondents, with support from: CM practitioners (33%-85%), CM practitioner organisations (two-thirds of the reviewed papers, with 36% preferring self-regulation and 27% a form of *"stronger"* regulatory framework); consumers (71%-95%) and CHC practitioners, with those from Australia, Netherlands and United Kingdom giving support to western herbal medicine (herbal medicine) (77%-92%) and naturopathy (73%-92%) (Carè et al., 2021). (Chapter 2, section 2.5 contains detailed results of a review of international literature on CM practitioner regulation.)

[9] Statutory regulation is that which is established in law and is usually under a governmental regulatory body (World Health Organisation, 2013) In the United States it is referred to as licensure (National Center for Complementary and Integrative Health, 2018). Voluntary regulation is where a profession regulates itself and is also termed 'self-regulation' (World Health Organisation, 2013).

Funding (governmental or private) of CM practice is an aspect that has not been well investigated. In 2008 a qualitative study investigated CM services within the United Kingdom's National Health Service. In the findings, the question of the National Health Service funding CM services (in the views of the National Health Service staff participants) was linked to evidence of the effectiveness of the CM modality (researched evidence) and safety aspects of the modality (Wye, Shaw & Sharp, 2008). A similar study in the United Kingdom associated funding for CM with "*cost cutting*" (Sharp, Lorenc, Feder et al., 2018).

More details on CM studies internationally (specifically naturopathy and herbal medicine, homeopathy, and massage therapy) of practitioner attitudes to regulation and government funding are given in chapter 2.

In New Zealand a government committee on CM (Koopman-Boyden et al., 2004) has recommended some form of regulation for CM practitioners, although this recommendation supported a *"strong"* form of voluntary regulation. (The word *"strong"* in relation to regulation was not further defined.) This recommendation helped shape the questionnaire that provided the data for this thesis, with CM practitioners being asked their views on regulation and whether it should be statutory or voluntary. (More information on the recommendations of this committee is included in chapter 3, section 3.5.) One CM practitioner organisation in New Zealand, the Naturopaths and Medical Herbalists New Zealand (2020a) intends to work towards statutory regulation of naturopaths and medical herbalists in New Zealand. Massage therapists in New Zealand have shown some support for statutory regulation for massage therapy in New Zealand (Massage NZ, 2018). Other than this thesis, no information has been collected on homeopaths views on regulation in New Zealand.

Chapter 2 (section 2.5) outlines the results of a review of studies of CM practitioner's views on regulation conducted in Europe, North America, and Australia. This thesis contains data

from naturopaths and herbal medicine practitioners, homeopaths, and massage therapists on their views on regulation and funding (chapter 5, section 5.4.3; chapter 6, section 6.3.3; and chapter 7, section 7.4.3).

1.2.3.3.6 Rationale for the inclusion of questions about the complementary medicine practitioners' attitudes to research and evidence-based practice in this thesis

Explorations of the prevalence of evidence-based practice (EBP) in CM have been conducted over the past twenty years, using both qualitative and quantitative health services research methodology. Several of these studies have been conducted in educational institutions (Ijaz, 2019; Steel, Diezel, et al., 2015; Steel, Hemmings, et al., 2015; Toupin April & Gabthey, 2013), whilst others have been with current CM practitioners (Givati, 2015; Goldenberg et al., 2017; Hadley et al., 2008; Kennedy et al., 2016; Kim & Cho, 2014; Ooi et al., 2018; A. Perlman et al., 2015). In a qualitative study in New Zealand (as part of a thesis) massage therapy students were asked about their attitudes to EBP and research (Smith, 2015b). No other New Zealand study investigating students' or practitioners' attitudes and practices related to EBP have been identified.

A government committee report in New Zealand (Koopman-Boyden et al., 2004) identified a dearth of CM research in New Zealand, as well as the need for educational institutions and practitioners to be engaged in research. This thesis investigates CM practitioners' valuing of research and research impacts on their practices, as well as their clinically based utilisation of EBP knowledge sources compared to other sources of clinical information (see chapters 5, section 5.4.2, chapter 6, section 6.3.2; chapter 7, section 7.4.2; and chapter 8, section 8.3).

1.2.3.3.6 Rationale for the inclusion of questions about the CM practitioners' alignment to public health goals in New Zealand in this thesis

Complementary medicine and IHC have been promoted as being a useful part of national public health strategies in several countries and by the World Health Organisation (2013), which included into its Traditional Medicine Strategy the following statement:

> *"As the uptake of traditional and complementary medicine [10]increases, there is a need for its closer integration*
>
> *into health systems. Policy makers and consumers should consider how traditional and complementary medicine*
>
> *may improve patient experience and population health. Important questions*
>
> *of access as well as population and public health issues must be addressed."*
>
> (World Health Organisation)

The strategic goals that the World Health Organisation outlines in its Traditional Medicine Strategy, pertaining to traditional and complementary medicine's role in national public health strategies, are: the identification of existing standards, policies and regulations that relate to traditional and complementary medicine; increasing credibility and accessibility of traditional and complementary medicine services to populations; ensure safety and effectiveness of traditional and complementary medicine provision through regulatory policies and align traditional and complementary medicine regulatory policy and resources to population needs (World Health Organisation, 2013).

In the United States the Federation of State Medical Boards recommended *"... encouraging the medical community to adopt consistent standards, ensuring the public health and safety*

[10] Traditional and complementary medicine

by facilitating the proper and effective use of both conventional and complementary treatments …" (Institute of Medicine (United States) Committee on the Use of Complementary and Alternative Medicine by the American Public, 2005)

Singer and Adams (2014) have identified several CM community healthcare programmes that were operational in the community across three Australian states, including refugee mental health, drug and alcohol rehabilitation and women's health care.

The development of public health policies for CM and IHC and the provision of programmes that include CM are inextricably linked to other areas that this thesis investigates, namely: evidence-based practice; regulation of CM practitioners and educational quality and qualifications of CM practitioners (Hussain & Malik, 2013). Alongside of these important areas of investigation, a specific question was included in the questionnaire that would allow the CM practitioners to self-report their alignment with the New Zealand Health Strategy goals (Ministry of Health, 2000). The development of a question related to CM practitioners alignment with New Zealand's strategic health goals was a response to the recommendations of a report on CM from a New Zealand government committee (Koopman-Boyden et al., 2004) for greater inclusion of CM services to aid the overall well-being of the New Zealand public (see chapter 3, section 3.5 for details of the committee's recommendations.)

1.2.4 Thesis structure

This work is a thesis by publication, which has, as its core, three journal papers that report on selected findings from a survey of CM practitioners, indicating the need to develop a deeper understanding of how integration of CM into mainstream healthcare can be considered in context of the issues that are raised by CM and CHC practitioners, as well as patients.

Chapter 1 provides a rationale for the utilisation of a health services research approach to investigate New Zealand CM practitioners' practices and perceptions in this thesis, situating

this thesis in the field of public health and health services research. The chapter explores models and frameworks illustrating how knowledge has been developed in CM, and provides a comparison of research methods that have been utilised to investigate CM. Chapter 1 also outlines the aims and scope of the thesis through a statement of the research questions, research significance and rationale for conducting the study, and the inclusion of the sections of the survey that provided the data for this thesis. Definitions of the core terminology that are used in this thesis are described.

Chapter 2 is a review of the international literature related to CM practices and perceptions emerging from Europe, North America and Australia (being societies with similarities to New Zealand). The review found in this chapter investigates similar areas of CM perceptions and practices that are found in this thesis, namely: education; research and evidence-based practice; CM practitioner regulation; integration of CM with mainstream healthcare, and CM practitioners' alignment with their respective country's national health objectives.

Chapter 3 explores the historic and current state of CM in New Zealand. It presents an overview of prevalent CM practices in precolonial and colonial New Zealand. The chapter traces the development of CM in New Zealand in the 20th century and links these developments to the current situation of the CM disciplines of naturopathy, herbal medicine, homeopathy, and massage therapy. This chapter also reviews the influence of a report from a New Zealand government advisory committee that was used to develop this study. A critical literature review of CM users, CHC and CM practitioners perceptions of the various issues investigated in this thesis concludes the chapter.

Chapter 4 describes the methodology used to: design the study within a health services research context, development, and application of an online survey tool; sampling and

recruitment of CM practitioner respondents for the study; downloading and statistically analysing the data collected online, and ethical considerations.

Chapter 5 presents results from the data collected from naturopaths and medical herbalists[11]. The results for naturopaths and medical herbalists are bookended by a brief introduction and discussion. These findings have been published in the journal *BMC CAM*.

Chapter 6 presents results from the data collected from homeopaths. The results for homeopaths are bookended by a brief introduction and discussion. These findings have been published in the journal *Homeopathy*.

Chapter 7 presents results from the data collected from massage therapists. Massage therapists are bookended by a brief introduction and discussion. These findings have been published in the journal *International Journal of Massage and Bodywork*.

Chapter 8 presents additional results, providing further context for the analysis of the survey data, in the areas of: CM practitioner education; research and EBP; integrative attitudes and practices of the CM practitioners (including referrals to other CM practitioners and allied health professionals); CM practitioners' use of New Zealand Ministry of Health services; participation in New Zealand Ministry of Health programmes, and CM practitioners' views on priorities for CM professions in New Zealand. These results are followed by a brief discussion.

Chapter 9 discusses the significance and implications of the findings of this thesis, as well as identifying the strengths and limitations of the study. The chapter highlights relevant and important issues related to the research objectives and identifies potential research questions that arise from the study.

[11] Naturopaths and medical herbalists are grouped together for the purposes of this study. Naturopaths commonly practise herbal medicine, and, in New Zealand and it is common for a naturopath to also identify as a medical herbalist. Chapter 5 reports on results of this thesis' study of naturopaths and medical herbalists.

Chapter 10 concludes the thesis with a summary of the research findings, highlighting further research and policy directions, which could potentially be addressed resulting from this study.

1.3 Definitions of complementary and integrative medicine in current literature

1.3.1 Definitions of complementary medicine

This thesis focuses on those therapies that can be broadly categorised as complementary. Attempts to define CM have been characterised by generalisations and vaguaries. For instance, the World Health Organisation (2013) has defined CM as *"a broad set of health care practices that are not part of that country's own tradition or conventional medicine and not fully integrated into the dominant health-care system."* This definition lacks specificity and is reflective of many attempts to define CM over the past twenty years. This lack of specificity may have led to resistance to incorporate CM treatments into the general provision of health care in many countries. International consensus around a precise definition of CM is lacking (Caspi et al., 2003; Foley et al., 2019; National Center for Complementary and Alternative Medicine, 2011; Ng et al., 2016), with vague definitions existing in the literature (Cohen, 2003; New Zealand Medical Council, 2017; Wieland et al., 2011).

The National Centre for Complementary and Integrative Health[12] has attempted to define CM in relation to 'alternative' medicine, with the term *'complementary'* applied for therapies utilised *"together with"* CHC and *'alternative'*, applied to therapies utilised *"in place of"* CHC (National Center for Complementary and Integrative Health, 2017). Whilst the National Centre for Complementary and Integrative Health (2008) has dropped the older definition of CM that defined CM by what it is not , there is still vagueness in the National Centre for Complementary and Integrative Health attempts to define CM. It is pertinent to note that

[12] Formerly the National Center for Complementary and Alternative Medicine

some institutions, such as the Medical Council of New Zealand, still refer to CM through a defining character of exclusion, rather than inclusion, stating that CM *"refers to therapies and treatments that are not commonly accepted in conventional medical practice"* (New Zealand Medical Council, 2017).

It is conceivable that this lack of clear definition and focused description has led to CM having developed in a seemingly haphazard manner, with a variety of configurations of modalities in different countries (Fisher & Ward, 1994; Zollman & Vickers, 1999b).

In 2001, the World Health Organisation (2001) utilised the term *"traditional, complementary and alternative medicine"*. By 2013 this changed to *"traditional and complementary medicine"* (World Health Organisation, 2013), a nomenclature that the World Health Organisation still utilises (World Health Organisation, 2019b). Globally, traditional and complementary medicine is often a reflection of cultural characteristics and practices, and therefore has its own diverse nature and application depending on the cultural environment wherein the modalities and practices have developed (Bodeker & Kronenberg, 2002). In contrast, there is effectively standardisation of CHC medical scientific knowledge and practices throughout the world (Cunha-Melo, 2015; Obadia, 2009; Ribeiro & Aroni, 2019). Whilst there is some movement to at least create international consensus for some modalities of CM, for example naturopathy (World Naturopathic Federation, 2017a) and Traditional Chinese Medicine (Peipei et al., 2011; Wang et al., 2016), there is still considerable heterogeneity in definitions and practices of CM modalities worldwide.

There have been several other attempts to define CM over recent years, including the Cochrane Collaboration's 'operational definition' development, which utilises a contextual framework to create a set of 'rules' or criteria for defining CM in systematic reviews conducted by Cochrane (Wieland et al., 2011). Other definitions utilise a social science lens,

discussing concepts such as individualisation of treatment and patient-centredness (Caspi et al., 2003; Turner, 2004), or inter-professional relationships between practitioners (Cant & Sharma, 1999). There still appears to be no clear consensus in the literature as to a clear and defining statement of the nature of CM. As the nomenclature progressed from *'alternative'* (sometimes termed 'unconventional medicine') to *'complementary'*, these labels have been defined in a variety of (and often confusing) ways (Caspi et al., 2003).

As stated, CM has often been defined by what it is not, this definition often emerging from a conventional medical perspective. In 1999, the following statement appeared in an article in the British Medical Journal, attempting to define complementary medicine:

> *"Complementary medicine refers to a group of therapeutic and diagnostic disciplines that exist largely outside the institutions where conventional health care is taught and provided."* (Zollman & Vickers, 1999b)

The statement was followed by a description of CM practitioners:

> *"Complementary practitioners are not generally concerned with understanding the basic scientific mechanism of their particular therapy. Their knowledge base is often derived from a tradition of clinical observation and treatment decisions are usually empirical. Sometimes traditional teachings are handed down in a way that disctheages questioning and evolution of practice or encourages reliance on their own and others' individual anecdotal clinical and intuitive experience."*
>
> (Zollman & Vickers, 1999b)

Such negative allusions to CM (when CHC attempts to create definitions for CM) are not rare occurrences, with the Medical Council of New Zealand (2017) also utilising exclusionary language to define CM:

> *"Complementary and alternative medicine (CAM) refer to therapies and treatments that are not commonly accepted in conventional medical practice. Complementary therapies are health care and medical practices that are used alongside conventional medical treatments but are not an integral part of conventional medicine, while alternative therapies are used instead of standard medical treatments."*
>
> (Medical Council of New Zealand)

This vagueness may be because the heterogeneous nature of CM defies definition. However, these exclusionary definitions have not been helpful to the recognition of CM's potential to contribute positively to public health objectives, as has been identified by the World Health Organisation (2013).

It should be noted that the variety of treatments and the approaches that characterise CM have implications for researchers in the field, particularly with the heterogeneous nature of CM philosophies and practices. This disparateness is reflected in the published studies, creating a dilemma as to the framing and categorising of CM studies (Foley et al., 2019). The defining of CM in terms of being outside CHC parameters has the potential to create uncertainty as to the effective application of CM in clinical situations where there is a need for interface between CM and CHC practitioners.

1.3.1.1 Definition of complementary medicine used in this thesis

For the purpose of this thesis the term *complementary medicine* (CM) is defined as **holistic medical systems or practices that have been developed over centuries, utilising a philosophical and practical alignment to healing processes that occur within nature, and**

are able to be used in patient-centred healthcare alongside of conventional or mainstream healthcare.

If CM has been difficult to define over the years, integrative medicine (IM) has been equally as problematic.

1.3.2 Definition of integrative health care

Integrative health care (IHC), often referred to as integrative medicine (IM), is a model of health care that combines CM and CHC approaches to patient care but has yet to have a universally agreed definition (Coulter et al., 2010; Hu et al., 2015). Research into IHC has included patient studies, studies centred around specific conditions, or specific populations, as well as studies that identify differing models and frameworks. Definitions have included the blending of CHC and CM into a *"new medicine"* and the use of CHC and CM *"alongside each other"* (Zhang et al., 2015). Other aspects of IHC have been identified, such as the central importance of the patient-practitioner relationship and an 'evidence-base' for treatment (Hu et al., 2015). Further attempts to define IHC have emphasised the nature of how the concepts, values, and understandings of CHC and CM are incorporated, in the exploration of experiences of practitioners and patients (Barrett et al., 2003). Theoretical and practical modelling, utilising analysis of peer-reviewed journal articles, has also been employed to develop classifications of IHC, ranging from independent relationships between CC and CM (a type of coexistence), through dependent relationships (primarily cooptative incorporation of CM concepts/therapies into CC practices), to fully integrative (a cooperative and collaborative relationship between practitioners) (Lim et al., 2016). However, interdisciplinary studies that investigate how practitioners of CM and CC interact in IHC frameworks are few and have heterogeneous foci and methodology. Much of the research in

IHC has focused on integrative approaches to medical conditions (Khorsan et al., 2011; Oberg et al., 2015), but there is some empirical data on models of IHC.

A useful framework for exploring IHC and its models and modes of practice has been developed out of a critical review of IHC literature conducted in 2016 (Lim et al., 2016). Directed content analysis was utilised to search and codify the various models of IHC found in the literature over the past 30 years. This led to a development of a classification for determining the nature and characteristics of IHC models, under three main systems: *independent* – where practitioners of CHC and CM coexist in a side-by-side relationship; *dependent* – with a more cooptative methodology, where CM practitioners are dependent on CHC practitioners for referral; and *integrative*, where there is a fully collaborative and cooperative relationship between practitioners (Lim et al.). This framework, with its systems and models has been described in terms of the major themes of: patients; cooperation; and medical approach or philosophy, with subthemes, such as freedom of patient choice and empowerment of patients; team work and communication; and scientific evidence compared to CM theoretical systems and philosophies (Lim et al.).

This, very systemised exploration of IHC contrasts with other perspectives that focus on the treatment processes of IHC, such as the determination that IHC is defined by a holistic approach. This holistic approach includes psychological factors, whole patient understanding to determine appropriate treatments, and the utilisation of a type of systems theoretical methodology, to understand causation of illness and selection of appropriate treatment approach be it CHC or CM (Fan, 2017). Whilst patient-centeredness is a feature of IHC, and an important one, the patient-practitioner relationship has also to be included in many descriptions of IHC to provide a useful understanding of the nature of IHC.

Tataryn and Verhoef (cited in Boon, Verhoef, et al., 2004) have reported that patients are themselves are often the major designers and arbiters of their own integrated treatment, with practitioners (both CHC and CM) also being significant contributors to such integration. The expectations of patients compared to physicians within an IHC framework has been explored in a qualitative study, which reported both physicians and patients being open to combining a wide range of options for treatment (Keshet et al., 2012). Whilst this type of exploration of IHC is useful, the relationship building that leads to effective integration requires further investigation. Boon, Mior, Barnsley, et.al. (2009) identified a model of IHC, where CHC practitioners discuss patient options (for care), and sometimes recommend CM modalities, as being "collaborative", meaning that both sets of practitioners are acting independently of each other, rather than truly integrative, where the practitioners are working closely together. It appears that, in a 'truly integrative system', there is more teamwork, with practitioners working with each other to develop a care plan where all the modalities are compatible and working together to meet patient expectations. This model of care is less common than the collaborative model (Lim et al., 2016). Two, highly detailed, models of IHC have been developed over the past twenty years.

1.3.2.1 The four-fold framework of integrative health care models

Integrative health care can be seen to be operating under four main models of care, identified by Kailin (2001). The first model is where much of IHC is facilitated by the patients themselves. They choose their practitioners, often not disclosing (or conversely fully disclosing) details of treatments from a CM or CHC practitioner to the other practitioner, or even the fact that they are receiving such treatment. Kailin terms this an isolated integration process. Patients develop their own personal integrative care strategies in this model (Simpson, 2001, cited in Coulter, 2004).

Secondly integrative care can exist under an 'arms-length' relationship between providers. Both sets of practitioners work in the same premises, but totally separately, in a type of 'marketing' or business relationship (Kailin, 2001).

The third type of IHC is where the integration is 'intrapersonal' within the CHC practitioners' practice. This is where the CHC practitioner utilises CM methods and modalities themselves, effectively negating the need for the patient to utilise other practitioners (Kailin). The danger of co-optation of CM modalities and treatments by CHC practitioners shutting out CM practitioners altogether has been identified (Baer, 2008).

The fourth model of IHC is termed *"transformative integration"* by Kailin (2001), where there is a partnership relationship between CHC and CM practitioners, and they share in truly collaborative care of patients. Cohen (2004) argues for CHC practitioners to be *"well-versed in a broad range of modalities"* and CHC practitioners to work with CM specialists. This four-fold model has evolved to seven-fold framework for IHC.

1.3.2.2 The seven-fold framework of integrative health care models

Emerging from a workshop on IHC, a more detailed seven-model framework of IHC has been proposed (Boon, Verhoef, et al., 2004), in which IHC is categorised into the following models: *parallel*, where practitioners practice independently in a common setting - much like Kailin's (2001) second type of IHC; *consultative*, where CHC and CM practitioners ask others advice or refer between themselves; *collaborative*, where CHC and CM practitioners share information on an ad-hoc, case by case basis; *coordinated*, where there is a formal structure within an organisation for communication and sharing of patient records; *multidisciplinary*, where the practitioners are organised into teams, with a leader who is usually not a practitioner; *inter-disciplinary*, where the practitioners make group decisions on a consensus basis about a specific aspect of patient care; and *integrative*, where there is a

"seamless continuum of decision-making and patient-centered care" between practitioners, which is guided by a commonly held set of values. This seven-phase model is based around the CHC and CM practitioners being part of one organisation (Boon, Verhoef, et al.).

It is evident that there are still differing opinions and approaches to IHC internationally, with meanings and definitions for IHC, based on social, organisational and potentially, cultural systems. Coulter (2004) relates the issues and difficulties with developing effective IHC as a *"paradigm clash"*. This may well be true. If so, it is a continuation of a long-standing divergence of medical philosophies that solidified into the division of medicine in the 19th and early 20th centuries. Chapter 3, sections 3.1 and 3.2 detail this division in medical philosophies as it occurred in New Zealand, creating in a sense, CHC and CM as divergent medical disciplines.

1.3.2.3 Definition of integrative health care used in this thesis

For the purpose of this thesis the term *integrative health care* (IHC) is defined as **the combination of CHC, and CM care being utilised alongside each other with referral of patients occurring between practitioners**. As the CM practitioner respondents in this study practise in a variety of settings using a variety of methodologies of practice, this referral (between CM and CHC practitioners) may occur within any of the above models of IHC.

Chapter 1 summary

Chapter 1 has explored health services research as a framework for researching CM, identifying health services research as a suitable model for investigating CM practitioners' practices and perceptions about healthcare, within a population health context. The usefulness of health services research in the development of IHC is explained.

An overview of research approaches utilised in the investigation of CM and IHC follows, with an analysis of CM research articles over the past 20 years, showing the gradual, but

steady, rise in CM research studies, and identifying the methods used in CM research over the past 20 years.

The chapter describes the research aim, objectives, and the research questions that arise from those aims and objectives. The significance, scope and rationale of the thesis is explained, identifying the quantitative nature of the data collection, analysis and presentation of results (chapters 5-8). This section also gives a rationale for the inclusion of the various domains of CM practice that provide the structure for the data collection process, analysis and results.

An outline of the structure of the thesis is followed by an exploration of definitions utilised for CM and IHC in the literature, with clear definitions of CM and IHC the guide the development of thesis.

Chapter 2 Complementary medicine practitioners' perceptions and practices: a review of literature from three world regions

2.1 Introduction

This thesis reports on complementary medicine practitioners' practices and perceptions in New Zealand, and it is most useful to position the thesis within the New Zealand setting. However, comparing of the findings of the thesis within the wider characteristics of CM practice internationally, assists in establishing the relevance of the findings to the wider CM profession. Whilst the characteristics of CM practice within New Zealand are unique, due to cultural, regulatory and geographical factors, there are many features of CM practice in New Zealand that are common with other countries. Countries within three world regions: North America, Europe and Australia (thereafter referred to as the three world regions), have been identified as having some regulatory, societal and cultural traits similar to those found in New Zealand. Literature about CM practices and perceptions, as well as aspects of complementary medicine practitioner organisations, in these three world regions, has been utilised in this chapter to provide context and contrast with the situation of CM practice in New Zealand.

This thesis acknowledges that naturopathy, herbal medicine, homeopathy and massage therapy are practised across many of the WHO world regions. For instance, naturopathy and homeopathy are widely practised in India (Ministry of AYUSH, 2022a) and South America (World Naturopathic Federation, 2017c), with massage is endemic in many cultural settings (World Health Organisation, 2019b). However, it is important to contextualise the results of this thesis within a sociocultural context. Therefore, this review is confined to the three world regions only.

2.1.1 Chapter outline

The initial section of the chapter explores the historical developments and current status of the CM disciplines of naturopathy and herbal medicine, massage therapy and homeopathy (being the disciplines from which the data has been drawn for this thesis). The definitions of naturopathy and herbal medicine, homeopathy and massage therapy are included in the overview of these three disciplines along with a brief exposition of the core principles, theories, and philosophies of the selected disciplines.

To contextualise the scope and content of this thesis, a review of international research from the 3 world regions, related to the topics of this thesis listed below, follows. The chapter includes an review of a selection of CM studies conducted in each region, related to the following topics: the perceptions and use of EBP by CM practitioners and commentators to provide a contextual framework of current mainstream healthcare provision; CM practitioners' perceptions of their education in CM, along with the current status of CM education along with aspects (including EBP) within CM practitioners' education, in the 3 CM disciplines - naturopathy and herbal medicine, massage therapy and homeopathy; regulation of CM related to the 3 CM disciplines; integration of CM with CHC, with reference to the above 3 disciplines; and the alignment of CM practitioners' practices to national health strategies.

A brief conclusion and a chapter summary will conclude the chapter.

2.2 Overview of the complementary medicine disciplines of naturopathy, herbal medicine, massage therapy and homeopathy

The CM disciplines of naturopathy/herbal medicine, homeopathy and massage therapy have long traditions of use, and their contribution to healthcare is widespread globally. Table 2.1

shows the distribution of these CM disciplines across the World Health Organisation designated world regions, with each of the CM disciplines of naturopathy/medical herbalist, homeopathy and massage therapy being practised in every World Health Organisation world region. The survey on which this table is based was conducted by the World Health Organisation in 2018 (published 2019). The figures were collated especially for this thesis. It is important to note that these figures are based on reporting from the governments of countries within the World Health Organisation world regions, therefore the frequencies of use of the CM disciplines may be skewed. For instance, the figures for massage therapy are much less than the other CM disciplines. It could well be that there are similar numbers of countries where massage therapy is practised. It is also pertinent to note that massage and herbal medicine are utilised in other CM disciplines, e.g., Traditional Chinese Medicine, Ayurvedic Medicine and indigenous practices. However, the table is useful for the understanding of the global spread of naturopathy/medical herbalist, homeopathy and massage therapy.

Table 2.1 Numerical identification of countries that practice: Naturopathy/Naturopathy; Herbal medicine; Massage therapy and Homeopathy, by World Health Organisation world region, extrapolated from World Health Organisation global report on traditional and complementary medicine (2019b)

World Health Organisation Region	Naturopathy[a]	Herbal Medicine[b]	Massage Therapy[c]	Homeopathy	Totals
Africa (n=21)	17	20	1	18	56
Americas (n=11)	24	12	2	12	50
Eastern Mediterranean	7	8	0	7	22
European	27	16	4	18	61
South-East Asia	4	1	0	4	9
Western Pacific	8	2	2	4	16
Totals	87	59	9	63	214

a. Naturopathic figures reflect the results of two surveys: one from World Health Organisation (World Health Organisation, 2019b); one from World Naturopathic Federation (World Naturopathic Federation, 2015). b. Herbal medicine figures are only those countries who have

specifically named herbal medicine in the World Health Organisation survey. It does not include traditional/indigenous CM practice, such as Traditional Chinese Medicine, Unani, Ayurvedic Medicine and other traditional practices that might utilise herbal medicine in their traditional medical systems. c. Massage therapy figures are only from those countries who have specifically named massage therapy in the World Health Organisation survey. It does not include traditional/indigenous CM practice, such as Traditional Chinese Medicine, Ayurvedic Medicine and other traditional practices that might utilise body therapies in their traditional medical systems. It is recognised that massage therapy is much more widespread internationally than the World Health Organisation survey identifies. The 4 countries of Scandinavian Europe where massage therapy is identified use the term *naprapathy* to denote body therapy (includes massage) are included.

2.2.1 Overview of naturopathy

Naturopathy, which is increasingly termed naturopathic medicine[13] (Lloyd, 2018a; Snider & Zeff, 2019), is grounded in medical philosophies, theories and principles that have frequently been an integral part of the historical development of medicine over centuries until relatively recent medical history (Hausser et al., 2017; Micozzi & Snider, 2019). This is particularly true of the medical philosophies and medical theories that governed health care practices in Europe. These practices were often aligned to observations (and concepts that arose from those observations) of how healing occurs within nature (Hausser et al.).

2.2.1.1 Historical development of naturopathy

Naturopathy traces its origins back to the spas of Europe in the 18th and 19 centuries. One of the most famous of the spas was the Kneipp clinic, where, along with hydrotherapy, massage was used for therapeutic purposes (Locher & Pforr, 2014). Benedict Lust introduced the methods of Father Sebastian Kneipp into health clinics in the United States, and this was the beginning of formalised naturopathic provision, in the United States and elsewhere (Broderick, 2019).

What was termed 'nature cure'[14] in the 18th and 19th centuries became *naturopathy* in the twentieth century when Dr John Scheel, a German physician residing in the United States,

[13] The term 'naturopathy' is utilised in this thesis for clarity, instead of 'naturopathic medicine'.
[14] Naturopathy is still termed 'nature cure' in India (Alter, Nair & Nair, 2017).

coined the term to identify his method of healthcare[15] (Micozzi & Snider, 2019). He later sold the use of the term to Benedict Lust who is generally credited as being the founder of the profession of naturopathy. Naturopathy evolved over the early twentieth century according to the healthcare understanding and needs of the time (Czeranko, 2013).

European naturopathy still encompasses the methods of 'classical' naturopathy. It includes exercise therapy, hydro/thermotherapy, lifestyle-regulative therapy, dietetic therapy, and phytotherapy. Classical European naturopathy includes neurotherapy and derivative methods such as cupping or leeching (Romeyke & Stummer, 2013).

In the early 20th century naturopathy blossomed in the United States with the migration of practitioners from Europe. It incorporated aspects of the traditions of medical practices that had emerged in the United States over the course of the 19th century, including Thomsonian medicine[16], physiomedicalism[17], eclectic medicine[18] and homeopathy (Czeranko, 2013).

Much like the United States, in Australia naturopathy developed from an amalgam of medical traditions, primarily herbal medicine and homeopathy (Seaton, 2012). Immigrant practitioners of naturopathy established the profession in the 20th century, building on the herbal and homeopathic traditions of the 19th century. Similarly to other countries, in Australia there was a decline in naturopathy in the mid-20th century, followed by a revival around the 1970s, when educational programmes (mainly diploma level) in naturopathy were

[15] The German word naturheilkunde was initially utilised by the German physician Lorenz Gleich (1798-1835), which Dr Scheel translated to the term naturopathy.

[16] Thomsonian medicine was based on the work of Samuel Thomson, who developed a healing system based on botanical substances, rejecting much of the orthodoxy of medicine prevalent in the early 19th Century (Flannery, 2002).

[17] Physiomedicalism arose from Thomsonian medicine and utilised botanical substances in healing illness, but also used vapour baths and nutritional counselling (Journal of the American Medical Association, 2011).

[18] Eclectic medicine, as its name suggests, was a diverse group of medical practices, including botanical medicine, nutrition, hydrotherapy and nature cure (Flannery, 2002).

established in private colleges (Seaton). More recently undergraduate degree programmes have been established in several private colleges and universities (Wardle et al., 2012).

2.2.1.2 Defining the naturopathic profession

The definition for naturopathy most utilised internationally is that it is a primary health care system, combining the art, science and philosophy of healing through nature's methods (Wardle & Oberg, 2011). The fundamental principles on which naturopathic health care is founded include: the healing power of nature; find the cause; do no harm; treat the whole person; prevention of illness and doctor as teacher (Bradley, 2013; Hausser et al., 2017; World Naturopathic Federation, 2015). The World Naturopathic Federation (2015) lists the following modalities as being utilised by naturopaths: clinical nutrition & dietary counselling; applied nutrition (use of supplemental products to treat health conditions); herbal medicine; lifestyle counselling; hydrotherapy; homeopathy and physical modalities, such as massage, osseus manipulation, yoga and other body therapies (World Naturopathic Federation). The World Health Organisation (2010) includes the above modalities within the scope of modalities utilised by naturopathy but adds acupuncture and counselling to the list.

2.2.1.3 Current state of naturopathy internationally: The role of the World Naturopathic Federation

The World Naturopathic Federation was established in 2015 after several high-level contacts between senior naturopaths and representatives from naturopathic organisations in North America with the World Health Organisation. These contacts identified that the aspirations of naturopathic associations for greater recognition and integration with mainstream healthcare could potentially be realised if naturopathy followed the example of chiropractic and established a world federation of naturopathic organisations. At the International Congress of Naturopathic Medicine in Paris 2014, several meetings were held and, by consensus of all

present, a brief mission statement was agreed to and an interim committee representing eight countries (including the author of this thesis) was formed. The committee conducted a global naturopathic workplace survey, which explored definitions and principles of naturopathy, educational models, and regulatory standards for naturopathy, across 30 countries (Lloyd, 2018).

A report was produced and presented at the inaugural meeting of the World Naturopathic Federation at the Health Fusion conference in Calgary, Canada (World Naturopathic Federation, 2015). This report outlined information about: country participation; naturopathic organisations involved in the Federation; definitions associated with naturopathy; demographic statistics about naturopathy worldwide; the then current situation regarding naturopathic regulation; and the international state of naturopathic research (World Naturopathic Federation).

The mission statement, constitution and goals of the World Naturopathic Federation were ratified at that first meeting. The mission statement of the World Naturopathic Federation is:

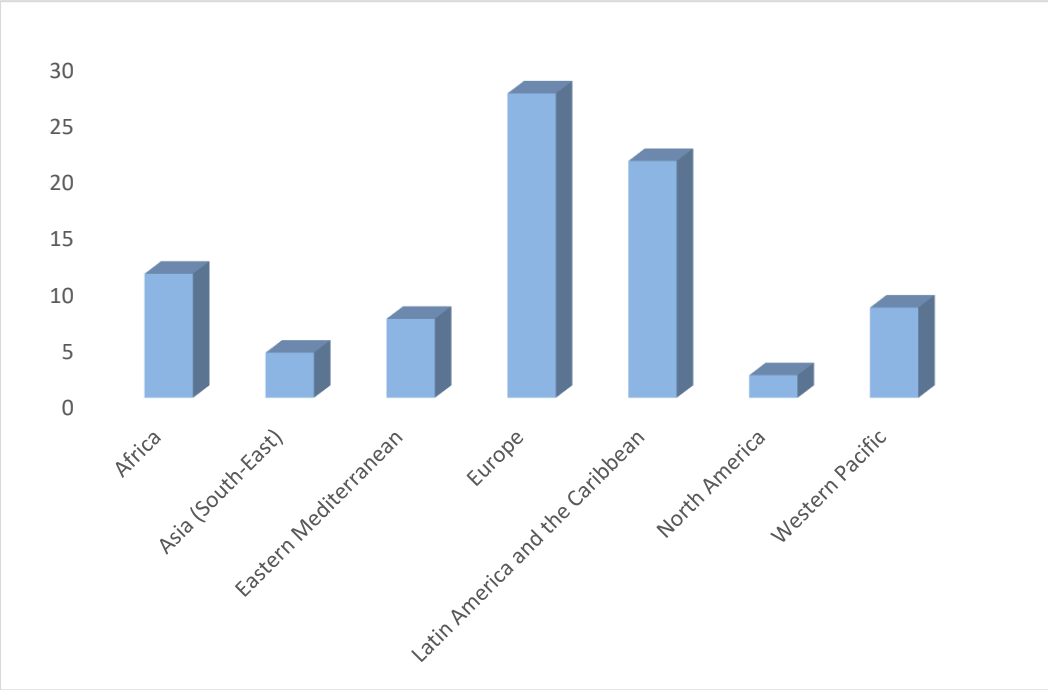
1. *Supporting the growth and diversity of naturopathy / naturopathy worldwide*
2. *Supporting the appropriate regulation and recognition of naturopathy / naturopathy*
3. *Promoting accreditation and the highest educational standards for the global profession*
4. *Encouraging naturopathic research*
5. *Establishing and maintaining a database of Naturopathic organisations, regulation, accreditation, conferences and research activities.*

6. *Working with world agencies (World Health Organisation, United Nations, UNESCO) and national governments and supra-national agencies in order to promote the naturopathic profession.*

(Lloyd, 2018)

In 2016 the World Naturopathic Federation (2015a) published the results of a survey that, in part, gauged the breadth and depth of naturopathy worldwide. The attached chart has been compiled from the results of that survey.

Fig. 2.1 Numbers of countries where naturopathy is practised by World Health Organisation world region (N=80)



2.2.1.4 Provision and use of naturopathy internationally: selected studies from three world regions

The spread of naturopathy across the globe is evident by the growing number of countries where naturopathy is now practised (see Table 2.1 in this chapter). Naturopathic user studies have increased over the past twenty years, showing evidence of naturopathy becoming a

choice of healthcare for significant percentages of populations in many countries. The following is a sampling of studies across the three world regions illustrating the expanding popularity of naturopathy internationally.

The United States population's use of naturopathy grew from 498,000 (0.2% of United States population) in 2002, to 957,000 (0.4%) in 2012 (Clarke et al., 2015). In 2018, approximately 6,000 naturopaths licenced in the United States (Mukamal, 2018). Currently (2021) naturopaths are licensed in 22 states of the United States and licensed naturopathic physicians belong to the American Association of Naturopathic Physicians (2021). In Canada the use of naturopathy by the public underwent a rapid expansion between the years 1997-2016 (from 6% to 11%) (Esmail, 2017). The Canadian Association of Naturopathic Doctors (2021) has over 2,400 registered naturopaths.

Although the continent is the birthplace of naturopathy, figures for the use of naturopathy in Europe are limited. There are limited statistics on the use of naturopathy, but useful information that shows evidence of widespread use of naturopathy in Europe has been produced.

The CAMbrella study (Weidenhammer et al., 2011) reports that, as of 2011, there were 15,000 naturopaths in Europe (mostly in Germany), with the World Naturopathic Federation survey (World Naturopathic Federation, 2016a) finding that, as of 2015, there were over 20,000 naturopaths in Europe. In the German health system what is termed 'classical naturopathy' is considered part of CHC (Münstedt et al., 2019), so actual numbers of consultations for naturopathy as distinct from CHC may be difficult to ascertain. A study of job satisfaction among naturopaths in Germany concluded that more research needs to be conducted with naturopaths as researchers (Goetz et al., 2017b).

One of the few studies of population use of naturopathy has been conducted in Spain, where a cohort of women with breast cancer (n=2235, RR24.8%) participated in a study that occurred between 2003 and 2013. Of the women participants, 55.2% utilised CM therapies, with 31.2% utilising naturopaths, with 30.9% utilising medical herbalists.

Switzerland has a long history of naturopathic practice. CM practitioners in Switzerland were surveyed in a cross-sectional study that included naturopaths (n=104, 24.4%). Female naturopaths comprised 83.5% of all naturopaths. The mean years of practice were 12.7 (SD 7.5), with 83 participants trained in Switzerland and 12 in France. The naturopaths had also trained in additional modalities, including massage (34.9%) and homeopathy (17.5%). For 74.3% of the naturopaths, naturopathy was their main professional activity, with 97.1% self-employed, with mean consultations per month at 54.3 (SD 57.1) and mean consultation length 72 minutes (SD16.7) (Dubois et al., 2019).

Australian naturopathy has developed over the 20th century and naturopathy is now a respected CM discipline in Australia (Naturopaths and Herbalists Association of Australia, 2021). A cross sectional survey of Australians (n=2019) found 6.2% of the population utilised naturopathy (McIntyre et al., 2019). The predictors of use included having chronic illness ($p<0.01$) and use of both CM and CHC ($p=0.05$).

The Australian Naturopathic Council (ANC) has been recently formed from naturopathic organisations and educational institutions that are members of the World Naturopathic Federation. The ANC is formed to provide a forum for cooperation, communication and efficiency among Australian naturopathic stakeholders (Steel et al., 2019). The Australian Register of Naturopaths and Herbalists (2021) has been established since 2013 and provides minimum standards for education and practice for naturopathy and herbal medicine in Australia, mirroring the standards for registration of health practitioners in Australia.

2.2.2 Overview of herbal medicine

This thesis includes herbal medicine practice (along with naturopathy), which is a CM practice prominent in New Zealand. The following is a summary of the historical roots of the use of medicinal plants (herbal medicine), followed by current definitions of herbal medicine and how herbal medicine is situated, within the overall provision of CM, currently.

2.2.2.1 Historical development of herbal medicine

Botanical medicine, commonly termed herbal medicine, has been an important part of pharmacopoeia in human health care for millennia. There is evidence that medicinal plants have been utilised for at least 60,000 years (Sewell & Rafieian-Kopaei, 2014). Herbal medicine has a central place in many traditional medical systems, such as Traditional Chinese Medicine (Xu & Yang, 2009), Ayurvedic Medicine (National Centre for Complementary and Integrative Health, 2020a), naturopathy (Joos et al., 2012; World Naturopathic Federation, 2020) and indigenous medical practices (Gericke, 1996; Pan et al., 2014).

The common form of herbal medicine practiced in New Zealand (and by the participants in this study) is termed western herbal medicine in several countries[19] (Nissen & Evans, 2012; Snow, 2016). Western herbal medicine is the traditional herbalism of Europe, which traces its origins to medical practices in ancient Greece and Rome (Petrakou et al., 2020; Staub et al., 2016). Many records exist of herbal knowledge being gathered and collated into texts (called 'herbals'), beginning with the works of Galen and Dioscorides of Rome, continued through the writings of the medieval monks, and extended by the later herbals of Gerard, Culpepper and several others, up until the end of the 18th century (Leonti & Verpoorte, 2017).

[19] Although this is not a common terminology for herbal medicine in New Zealand

With European colonisation of many other countries of the world, the herbal materia medica[20] of western herbal medicine was extended with the use of plants indigenous to the colonised countries. The many settlers of European origin in the United States incorporated plants native to the Americas into the western herbal medicine body of knowledge (Appel, 2010). Currently western herbal medicine uses medical botanicals from many different traditions, from Traditional Chinese Medicine and Ayurvedic Medicine to many indigenous cultures (Niemeyer et al., 2013).

Many modern pharmaceutical medicines are derived from plant-based chemicals (Schmidt et al., 2008), yet the practice of medical herbalism has gained little governmental recognition despite its widespread use internationally (World Health Organisation, 2019b)

2.2.2.2 Defining herbal medicine

Herbal medicine is not clearly defined in literature, with one definition being: *"An herbalist can be defined as a practitioner who uses medicinal herbs as a primary modality to treat patients or clients."* (Zick et al., 2009). The World Health Organisation (2013) has included herbal medicines in its Traditional Medicine Strategy, linking herbal medicine(s) with traditional methods of healing. Previously, in its Guidelines for the Assessment of Herbal Medicines, the World Health Organisation regarded herbal medicines as *"... aerial or underground parts of plants, or other plant material, or combinations thereof, whether in crude state or as plant preparations"* (World Health Organisation, 1991). Herbal medicines have been deemed the oldest form of medicine (Barnes et al., 2007), and have been used for centuries in medical traditions that encompass all populations (Shaw et al., 2012). But, unlike naturopathy, there is no explicit set of philosophies or theories that guide the practice of herbal medicine, with methods appearing to differ according to the ethnicity of the herbalist

[20] A herbal materia medica is a compendium of herbal knowledge

and the patients (Bharucha et al., 2003). Herbal medicines have been utilised in an integrative fashion with CHC, with reviews showing the usefulness of integrative approaches using herbal medicine (Samuels & Ben-Arye, 2020). In summary a medical herbalist can be said to be any practitioner who uses botanical preparations for the purpose of restoring health, which defines the term 'medical herbalist' as utilised in this thesis.

2.2.2.3 Current situation of herbal medicine practice internationally

Unlike naturopathy there is no international organisation representing medical herbalists however, Traditional Chinese Medicine (National Centre for Complementary and Integrative Health, 2020b), Ayurvedic Medicine (Kumar et al., 2017) and naturopathy (World Naturopathic Federation, 2016b) all utilise herbal medicine as an integral tool within the treatment practices, and each of these medical systems have organisations that represent them locally and internationally. Traditional Chinese medicine practitioners are regulated within the Chinese medical system, with Traditional Chinese Medicine doctors and pharmacists being required to undertake three-year residencies in CHC medical institutions, prior to going into practice (Xu & Yang, 2009). The Chinese government has spearheaded efforts to gain acceptance of Traditional Chinese Medicine worldwide, culminating in details of Traditional Chinese Medicine concepts being included in the International Classification of Diseases 11 (ICD11), a publication of World Health Organisation (Nature, 2018; Xu & Yang, 2009). In India Ayurvedic Medicine has gained recognition under the Ministry of AYUH (2021), and 250,000 practitioners are registered under the Ministry (World Health Organisation programme on Traditional Medicine, 1998). The World Health Organisation (2019b) has recognised the importance of herbal medicine in the spectrum of traditional and complementary medicine internationally.

A study of western herbal medicine practitioners in the United Kingdom (n=55, RR 29%) found that 81% were female and all participants were of European ethnicity. The majority of participants (69%) considered herbal medicine to be "alternative" to biomedicine, with only 26% perceiving it to be "complementary" to biomedicine (Nissen, 2010).

The Naturopaths and Herbalists Association Australia (2021) began in 1920 as the National Herbalists Association Australia and is the oldest CM organisation in the country. In 2016 it opened its membership to naturopaths (as many of its herbalist members were also naturopaths) and incorporated the word 'naturopaths' into its name.

2.2.3 Overview of homeopathy internationally

2.2.3.1 Historical development of homeopathy

Homeopathy has been the subject of debate and controversy over the historical period of its existence. In chapter 3 this thesis will discuss the 'medical divergence' between the 'regular' and 'irregular' medical practitioners in 19th century New Zealand. Homeopathy was one of the CM disciplines that was prominent among the disciplines in colonial New Zealand that earned the name 'irregular'. It is of note that this divergence between CM and CHC was not unique to New Zealand but was prevalent in several countries.

Homeopathy began with Samuel Hahnemann (1755-1843) in 18th century Germany, initially as a reaction to the harsh 'heroic' medicine[21] popular among many doctors. Hahnemann developed a set of principles that became the basis if homeopathic treatment. The three

[21] 'Heroic' medicine mainly consisted of bloodletting, purging (using powerful laxatives) and vomiting (using powerful emetics). These were considered to reduce fever. Later, as stronger herbal remedies were introduced into Europe, these were incorporated. One of these was Cinchona bark, which was used to reduce fevers in malaria, and it was Cinchona bark that Hahnemann experimented with, inducing in him a fever similar to the fever of malaria, giving him the inspiration to develop *similia similibus curenteur* (Bellavite, Conforti, Piasere, et. al., 2005).

prominent principles were "similar similibus curenteur"[22], the individualisation of cases[23] and 'the minimum dose". He also developed a method of preparing medicinal substances, through a process of dilution and succussion[24], as well as a method 'testing' the effectiveness of the remedy called *proving*[25] (Bellavite et al., 2005).

Hahnemann met a lot of resistance to his ideas and his practices in Germany and spent his last years in Paris where he died. Through the followers of Hahnemann, homeopathy spread throughout Europe, the Americas, Australia, and New Zealand and to India, where it has become a registered medical discipline under the banner of a government department (Ministry of AYUSH, 2021).

In Britain, homeopathy had a rapid rise in popularity after being introduced by Dr. Quinn around 1830. It is notable that homeopathy was adopted by the aristocracy (the British royal family in particular) and is still popular with the many in that societal stratum today (Morrell, 2018). Soon after introducing homeopathy into Britain, Quin established the British Homeopathic Society (1843), the British Journal of Homeopathy (1844) and a hospital in London (1850). Quin manoeuvred an amendment to the 1958 Medical act to favour a

[22] Literally means 'like cures like' and refers to the use of substances that will produce a similar symptom pattern (if administered to a health person) as the symptom picture of the person being treated

[23] In the individualisation of treatment, homeopathy has commonalities with other CM disciplines, such as naturopathy and HM.

[24] Substances are dissolved or mixed with lactose powder and a series of dilutions are made (these could be up to several million). At each dilution step, the remedies have a kinetic force applied through striking the container on a hard surface. This application of kinetic force is termed succussion, and this method is still used (although mechanised) in the manufacture of homeopathic remedies today. Homeopathy postulates that this process allows the solute (usually a water and alcohol mixture) to receive the energetic vibration of the agent being potentised. It is this energetic vibration that (homeopathy postulates) produces the curative effect on the body. (Tournier, Klein & Würtenberger, et. al., 2019).

[25] The healing properties of external agents that have been potentised are tested by giving repeated doses of the remedies in various potencies (numbers of dilutions and succussions), a process termed *proving*. The symptoms that develop in the person ingesting the remedies are recorded and become the guiding criteria for remedy selection in patients with a similar set of symptoms

tolerance of homeopathy in Britain, which prevented it being seen (at least officially) as a 'deviant' form of medicine, a situation that occurred in many other countries, including New Zealand (Morrell).

Many practitioners of homeopathy in Britain also practised other therapies that were not accepted as mainstream medicine, such as medical botany (herbal medicine) hydropathy and mesmerism (hypnotherapy). However due to its popularity, homeopathy in Britain came under intense pressure from the mainstream medical establishment and began to decline in the latter half of the 19th century and primarily became the domain of lay persons who practised without a medical license (Morrell, 2018). This situation is similar to what was happening in New Zealand (Belgrave, 1985), Australia (Martyr, 2002b) and the United States (Haller & Flannery, 2009).

In the United States, homeopathy was introduced by German immigrants around 1820 and grew rapidly among the urban population and competed well within a 'medical marketplace' that included eclectics (herbalists), hygienists (nature cure) and 'regulars' who practised the medical orthodoxy of the day. Several colleges were established to train homeopathic doctors, including many women (Kirschmann, 2003). The American Institute of Homeopathy was established in 1844. Kirschmann postulates that this triggered the establishment of the American Medical Association as a response to the 'threat' posed by the homeopaths. The American schools of homeopathy taught the conventional anatomy and physiology of the time, as well as homeopathic principles and practices, and they considered themselves as contributing to the development of medical science. With the advent of microbiology, conventional medicine developed down the path of 'science', whilst unorthodox practitioners, including homeopaths, were increasingly being viewed as 'quacks', and excluded from the 'regular' medical societies. At its height (1911) homeopathy in the United States had 10

national societies, 60 hospitals (with another 38 hospitals providing homeopathic services along with CHC), 13 colleges and 20 journals (Haller & Flannery, 2009).

Abraham Flexner's famous (or infamous depending on the lens through which it is viewed) report *Medical Education in the United States and Canada* setting out the "*gold standard for medical education*" (Duffy, 2011). Although several homeopathic schools were well equipped, and teaching accepted medical science, Flexner still recommended their absorption into the medical schools endorsed by the American Medical Association (Kirschmann, 2003).

Many 'regular' doctors who practised homeopathy began to give up such practice, whilst others continued to practise homeopathy, choosing to split with the American Medical Association to remain homeopaths. Like so many other CM disciplines around the world, the early part of the 20th century saw a struggle for survival with homeopathy and homeopaths (Kirschmann, 2003).

The development of homeopathy in Australia mirrors that of Britain, the United States and other countries, wherein the early days of European settlement saw many practitioners of homeopathy, most having little in the way of formal medical qualifications, although an early homeopath, Dr Stephen Simpson (credited with being Australia's first 'home grown' homeopath), gained his medical qualification in Britain but included homeopathy into his practice when resident in the new colony. Opposition to homeopathy was not long in arising, based on commercial concerns from 'standard' druggists (Armstrong, 2020). Many other homeopaths followed Simpson, and homeopathic clinics and hospitals were established in Melbourne, Launceston, Sydney and Adelaide. In many cities free homeopathic clinics were set up for administering homeopathy to the poor. However, like homeopathy (in fact most other CM disciplines) in several countries, there was a decline in the 1920s as the dominance

of biomedicine grew. The revival of homeopathy in Australia began in the 1970s, has been linked to *"world-wide changes in spiritual values and public perception regarding health"* (Armstrong).

2.2.3.2 Defining homeopathy

Homeopathy is a CM discipline that is defined by its principles, rather than a definition that attempts to capture what homeopaths do. Homeopathy is primarily characterised by the law of similars; *similia similibus curenteur* – like cures like, as well as potentisation and *proving* (see aforementioned footnotes) (Righetti et al., 2011). In summary a homeopath is a practitioner who utilises homeopathy, its principles, and practices, to treat others with health problems.

2.2.3.3 Current state of homeopathy internationally

A survey conducted by World Health Organisation (World Health Organisation, 2019b) across all 194 member states (World Health Organisation, 2019c) found that 100 World Health Organisation member states acknowledged that homeopathy was utilised by their populations (52% of all countries in World Health Organisation, with 56% of the countries where homeopathy is utilised identifying traditional and complementary medicine as part of healthcare delivery). See Table 2.1 for numbers of countries in each of the World Health Organisation world regions that have homeopathy as part of the range of CM disciplines that are practised and utilised (by the population) in those regions.

An International Council for Homeopathy (2019) was established in 2007. Representing homeopathy associations from 25 countries, 18 of which are in Europe. Other countries include: the United States; Estwatini (formerly Swaziland); Israel; Japan; Kenya; New Zealand and Turkey. The ICH advocates for: freedom of choice in healthcare (includes

homeopathy); access to homeopathic remedies internationally and maintaining high standards of homeopathic practice and education (International Council for Homeopathy).

The question of an economic benefit from homeopathic treatment has been explored in the literature. In response to claims from Canadian homeopaths that homeopathic treatment was cost-effective (Kelner et al., 2002), Viksveen, Dymitr and Simoens (2014) conducted a review (non-systematic) of the literature (14 studies included) on economic benefits of homeopathy. Eight of the studies reported some cost savings whilst reporting improvement in the patients' conditions, with four reporting improvements in patients' conditions at a similar cost to controls (conventional treatment or standard care), with two reporting similar results in improvement of the patients 'conditions, but higher costs (Viksveen et al.).

Two systematic reviews have been conducted on the safety of homeopathy and homeopathic remedies. A systematic review of case studies and case series (38 articles included n= 1159) conducted in 2012 gauged causality (the homeopathic treatment being the cause) in four levels: *certain, almost certain, likely* and *unclear*. In 3 studies homeopathy was found to have *certainly* caused the adverse reaction, with 12 *almost certain*, 17 likely and 6 unclear. In the studies, the adverse reactions were identified to have been allergic reactions, ingestion of toxic substances and substitution of conventional care. No explicit details were included in the reporting of the results of this systematic review.

The use of homeopathy in the United States grew slowly between 2002 and 2012, from 3.4 million adults to 5.05 million adults (Clarke et al., 2015). A telephone survey conducted in 2006 investigated CM use among racial groups (n=3,921, RR not identified). Homeopathy was utilised by 8.1% of non-Hispanic whites (n=757); 3.2 of African Americans (n= 1081) and 3.9% Mexican Americans (n=1057) (Kronenberg et al., 2006). There are three different organisations that register homeopaths in the United States: the American Institute of

Homeopathy (American Institute of Homeopathy, 2021); the Council for Homeopathic Certification (Council for Homeopathic Certification, 2021) and the Homeopathic Academy of Naturopathic Physicians (Homeopathic Academy of Naturopathic Physicians, 2021).

In Canada homeopathy was included in a study of changes in use of CM practitioners over a time period (1994-2011) (n=10186). The study found an increase of naturopaths/homeopaths from 1.2% (1994/95) to 1.9% (2010/11) (Canizares et al., 2017).

In the 2006 Australian census there were 238 persons who identified as homeopaths in the national census (Leach, 2013). In 2007 a national survey of complementary medicine use in Australia (n=1067, RR 15%) found that 6% (CI 4.6-7.4) of those surveyed used homeopathy and, of that 6%, 47.7% (CI 35.5-59.9) visited a practitioner (homeopath or other practitioner who used homeopathy) (Xue et al., 2007).

2.2.4 Overview of massage therapy

2.2.4.1 Historical development of massage therapy

Dating back to Hippocrates, massage in the western world has been an important discipline within medical practice (Benjamin, 2012). Massage is also an intrinsic modality within Traditional Chinese Medicine and Ayurvedic Medicine, being applied according to the principles and theories of these medical systems (Calvert, 2002; Tarver et al., 2016). Massage has also been integral to many indigenous healing systems throughout history, and is still practised in many cultures to promote health and restore balance according to the concepts and understanding of indigenous peoples (Ahuriri-Driscoll & Boulton, 2019; Alefosio & Henderson, 2018; Darko, 2009; Day et al., 2014; Dedra et al., 2000)

In the late 18th and early 19th centuries Europe massage as therapy became systemised through Ling in Sweden (the so called ‘Swedish massage’) and Mezger in Denmark and the

Netherlands, and massage methodology began to appear in medical literature, from a variety of medical authors, in Europe and the United States (Benjamin, 2012).

Physiotherapy has a long association with massage, and it is from the use of massage in gymnastic institutions, particularly in Sweden and Germany, that physiotherapy was born (Sharma, 2012). It was later incorporated into CHC as an allied therapy in medical conditions (mainly those involving musculoskeletal injuries and ailments)

Influential in promoting massage as a medical modality was William Murrel of England, who stated:

> *"Massage … is a scientific method of treating disease by means of systematic manipulation. The individual muscles or groups of muscles are picked out, or isolated and stimulated to contraction mechanically."* (Murrell, 1887)

Murrel (1886), who was a member of the Royal Society of Physicians (London), despised the description of massage as mere "rubbing" and was influential in the growth of massage as a therapeutic agent in disease conditions, which eventually led to the adoption of massage in hospitals and the profession of physiotherapy in the United Kingdom. One of Murrel's contemporaries was Douglas Graham from the United States, who was also influential in the use of massage in medical conditions and wrote several papers identifying the role of massage in particular musculoskeletal conditions (Graham, 1887; Graham, 1893, 1917) as well as writing a book on the role of massage in health care and promotion (Graham, 1884).

However, massage became tainted by an association with prostitution in the latter half of the 19th century. To counter this association with the sex trade, the Society of Trained Masseuses was formed in the United Kingdom in 1894 by a group of trained nurses and midwives, who

were also masseuses (Nicholls & Cheek, 2006). This society trained women to practise massage within a medical context. The women masseuses were not allowed make physical contact with any male clients, thus avoiding any association with prostitution (and avoiding criticism from the medical establishment who were almost exclusively male). The members of the Society developed what was termed a 'physical rehabilitation model' and utilised biomechanical assessment and "Swedish remedial exercises". Men were admitted to the Society in 1905, with the activities of the Society not only forging the path of physiotherapy in Britain but playing a role in feminine emancipation (Nicholls & Cheek).

In the United States, physical therapy developed in the first decades of the 20th century. This development was spearheaded by Florence Kendall, whose book on human muscles gained worldwide recognition. Kendall attempted to distinguish physical therapy from osteopathy and chiropractic, a task that progressed gradually up until the mid-twentieth century (Fornasier, 2017). However, the established profession of physiotherapy, and its major therapeutic instrument – massage, remained under the dominance of the medical profession, being officially controlled by doctors (Fornasier).

After World War II, referrals from physicians for massage declined and physiotherapy became much more focused on remedial exercise. Massage as a form of treatment was no longer given the importance as an adjunctive therapy to medicine as it once was, although it was still part of physiotherapy practice (Benjamin, 2012; Wrynn, 2014). The field was now open to CM practitioners to take up the practice of massage.

The establishment of massage therapy in Australia occurred around the 1870s, with massage therapists having good reputations and receiving referrals from medical practitioners (Martyr, 2002a). Massage societies existed in the early 1900s and a national association was formed in 1906. Similar to other countries, this association eventually became the Australian

Physiotherapy Association in 1939 (Evans, 1955). The 1970s saw the emergence of massage as a therapy separate from physiotherapy (Callaway & Burgess, 2010) and there are now three Australian associations that register (voluntary) massage therapists, with the Association of Massage Therapists having 3400 members (The Association of Massage Therapists, 2021).

2.2.4.2 Defining massage therapy

Massage therapy is almost as eclectic as naturopathy, in that there are many methods and approaches that are utilised in massage therapist. Defining the massage profession has been centred on the use of manual therapy for health benefits.

In 2010 a symposium of massage therapists from the United States, Canada and Europe attempted to define massage therapy and to establish a basis for a theory of massage therapy. Whilst a clear definition of massage therapy did not result, some clarity around what was required to develop massage therapy theory and practice did emerge from the discussions. The conclusion reached was that massage therapy involved "soft-tissue manipulation". However, this definition was recognised as limiting the practice of massage therapy and was inadequate, as massage involves making change to the soft tissues and evaluating such changes that have occurred in the tissues, as well as patient management and health promotion advice (Kennedy et al., 2016). Several other attempts have been made to define massage therapy. Moyer, Rounds and Hannum (2004) extend the afore-mentioned definition in describing massage therapy as *"the manual manipulation of soft tissue intended to promote health and well-being".* Massage therapy has also been defined as being, *"the scientific and systematic manipulation of the hands on the tissues of the body for the purposes of maintaining and obtaining health."* (Susan Salvo speaking in Holzknecht, 2007)

The above definitions all include the use of manual manipulation of soft tissues, with the further explanation that massage therapy is involved in enhancing or promoting health. Massage New Zealand (the professional association for massage in New Zealand) states that:

> *"The practice of massage therapy involves more than applying massage techniques. Massage therapy as a health care approach sits within the wellness model and aims to support clients in balancing mental, emotional, and physical needs. Often a variety of techniques and styles of massage therapy are applied depending on the skill base of the therapist, their scope of practice, and the principal goal of the massage therapy session."* (Massage New Zealand, 2020b)

2.2.4.3 Current situation of massage therapy internationally

The establishment of a World Massage Federation (2021a) indicates the maturation of massage therapy, similarly to the establishment of the World Naturopathic Federation by naturopathy. The establishment of a World Massage Federation indicates an increased desire for massage therapists to be accepted as a legitimate profession that communicates with a united message, to governments, policy makers and CHC. The World Massage Federation seeks to *"promote a development of massage education*", and "*the theory and practice of massage internationally'* and currently has 134 education institutional members, in five of the six World Health Organisation world regions (no members in Africa). At the time of writing this thesis, the World Massage Federation appeared to be in a developmental stage, with little information on its date of establishment or future plans.

The World Massage Federation has 96 members in the European region, which is the region (along with the United States and Canada) with the greatest degree of statutory regulation of massage therapy internationally (World Massage Federation, 2021a)

In North America massage therapy is well established and regulated in several states and provinces under licensure systems. In Canada the following provinces regulate massage therapy: British Columbia; New Brunswick; Newfoundland/Labrador; Ontario and Prince Edward Island (Federation of Massage Therapy Regulatory Authorities of Canada, 2021). The minimum educational requirement for licensure in Canada is 2200 hours (Canadian Massage Therapist Alliance, 2021)

In the United States, 31 states license massage therapists, with varying requirements for educational hours, but the minimum is a 500 hours' course (Massage.CA, 2021).

The American Massage Therapy Association was established in 1943 and has grown to become the largest not-for-profit organisation for massage therapists globally. The American Massage Therapy Association (2019) have produced a fact sheet outlining some relevant statistics. In 2018 19% of the population in the United States utilised massage, primarily for pain relief, stiffness and soreness of muscles and joints, but also to promote wellbeing and fitness, with approximately half being recommended by physicians (46%), physiotherapists (49%) and chiropractors (51%) (American Massage Therapy Association). This usage of massage therapy by the United States population has grown from 5% in 2002 (Clarke et al., 2015). The National Center for Complementary and Integrative Health in the United States has recommended massage therapy for supporting cancer care, fibromyalgia, HIV/Aids and paediatric growth. Massage therapists are licensed in 45 states in the United States (National Centrer for Complementary and Integrative Health, 2019).

The American Therapeutic Massage Association produces a yearly research report, that publishes findings across a range of areas related to the massage profession, providing useful massage workplace and massage consumer data. The 2021 report (American Massage Therapy Association, 2021a) found that, for the year ended June 2020, 21% of adult

Americans received at least one massage and 38% of adult Americans had received a professional massage in their lifetime.

This usage of massage therapy by the United States population has grown from 5% in 2002 (Clarke et al., 2015). A telephone survey conducted 2006 investigated CM use among racial groups (n=3,921, RR not identified). Massage therapy was not distinguished from acupressure, but results showed that manual therapies were use by 13.1% of non-Hispanic whites (n=757); 7.2 of African Americans (n= 1081) and 8.2% Mexican Americans (n=1057) (Kronenberg et al., 2006).

Massage therapy is popular in Europe, being utilised by 11% of the population (Kemppainen et al., 2017) with 15 countries having regulated massage therapy (The European Commission, 2021). The Europe Massage Association acts as a union for wellness massage therapists and spa employees (Europe Massage Association, 2021).

The use of massage therapy in spas in Europe has a long history dating back to ancient Greek and Roman times (van Tubergen & van der Linden, 2002). Massage therapy is still offered in traditional European spas, which often utilise balneotherapy (hydrotherapy) alongside of massage therapy. The European Spas Association is set up to represent medical spas, with over 1400 members, who are all recognised at a government level (European Spas Association, 2021).

Some tertiary healthcare institutions in Europe offer massage to patients. In the Netherlands there are several paediatric outpatient clinics that offer massage therapy, along with aromatherapy, with massage therapy also being offered in some outpatient clinics in Sweden (Längler & Zuzak, 2013). An Italian hospital has utilised massage delivered by nurses, with some positive results. However, the nurses attended a five-day programme in CM to prepare to deliver massage in the hospital (Enrico De et al., 2020).

Australia has at least 5 associations that register massage therapists (Natural Therapy Pages, 2021). Membership numbers were only available from the Association of Massage Therapists (2019), who had 3220 members at the end of 2018.

In 2007 a survey conducted with a sample of the Australian population (n=1067) found that 27.2% (95% CI 25.4-29.9) utilised massage therapy. Of those participants that utilised massage therapy, 73.7% (95% CI 68.6-78.8) visited a practitioner. A sub-study of the Australian Longitudinal Study on Women's Health (2021) with women who consulted a CM practitioner (n= 2120), found that 84.9% had consulted a massage therapist (Frawley et al., 2016).

Wardle, Barnett and Adams (2015) conducted a workforce (cross-sectional telephone) survey with Australian massage therapists (n=301), finding that 67% were female, 14.6% worked full-time (more than 30 hours per week) and 81.7% were self-employed.

2.3 Evidence-based practice of naturopaths and medical herbalists, homeopaths and massage therapists

Evidence for CM therapies and practices is a complex issue, one that has generated debate about the validity of CM in a modern healthcare context that seems to demand rigorous scientific methodology. This debate has taken several forms, some of which reflect a wider debate about the nature of evidence itself. This section of the thesis will review the international literature about evidence in CM as well as studies that have been conducted with CM practitioners across the three world regions.

Steinsbekk (2007) argues that, in order for EBP to be understood and applied in CM, the CM practitioners need to be involved in the research process. The research for this thesis was conducted by a CM practitioner.

Internationally there is some information regarding the attitudes, perceptions to, and practices of, EBP in CM practitioners, which is a central area of investigation in this thesis.

2.3.1 Overview of the current state of evidence-based practice for naturopathy, homeopathy and massage therapy internationally

The World Health Organisation has a strategic objective to support EBP in CM. Its traditional and complementary medicine strategic document (Strategic direction 2) states this objective as: *"Strengthen the knowledge base, build evidence and sustain resources"* (World Health Organisation, 2013). The World Health Organisation also states:

> *"While there is much to be learned from controlled clinical trials, other evaluation methods are also valuable. These include outcome and effectiveness studies, as well as comparative effectiveness research, patterns of use, and other qualitative methods. There is an opportunity to take advantage of, and sponsor such "real world experiments" where different research designs and methods are important, valuable and applicable. The importance of embracing various kinds of contributory research methods and designs in the effort to build a broad evidence base to inform national policy and decision making has been underlined by the National Institute for Health and Care Excellence (NICE), as well as others."* (World Health Organisation, 2013)

The argument has been made by several authors that CM treatments must be assessed using the same stringent research methods as biomedical interventions (Chiappelli et al., 2006; Ernst, 2003; Fønnebø et al., 2007; Leach & Gillham, 2011). However, the issue of what is the appropriate methodology to appraise the effectiveness of CM is also found within the literature (Elder et al., 2019; Fønnebø et al., 2007; Leach et al., 2018; Richardson, 2002; Weeks, 2019).

Whilst this section of the current chapter is focused on EBP, this thesis shows that questions of CM practitioners' attitudes, perception and practices regarding EBP are intertwined with the teaching of EBP in CM educational institutions. This chapter utilises examples from CM education studies and other literature to illustrate the state of CM practitioners' and CM students' relationship and attitudes to EBP.

As part of a review of insurance rebates for CM practitioners the Australian government is reviewing evidence of effectiveness for CM practices (a review of systematic reviews), including naturopathy and herbal medicine (Natural Therapies Review Expert Advisory Panel secretariat, 2020; Project Team NHMRC, 2019). A similar review in 2015 found a lack of conclusive evidence for herbal medicine, based on the finding that there were no pragmatic studies of herbal medicine practices, and there was a similar conclusion about evidence for homeopathy (lack of good quality studies) (Wardle, 2016).

Over the past twenty years the findings from several investigations into CM practitioners' perceptions and use of evidence in practice have been published across the selected world regions covered in this section (3 world regions). The following sub-sections outline the results of searches across a range of databases, including Medline, Cinahl, AMED and Science Direct, as well as general internet searches.

2.3.1 Review of studies of naturopaths', homeopaths' and massage therapists' attitudes and perceptions of EBP and research in North America, Europe and Australia

Whilst there have been limited studies of CM practitioners' perceptions of EBP, the studies that have been conducted provide insights into the way naturopaths, homeopaths and massage therapists view EBP and its value and impact on their practices. As part of this review of CM practitioners' use and perceptions of the value of EBP, research studies that investigated CM practitioners clinical decision-making processes are included. This aspect of CM practice

often indicates CM practitioners' approach to EBP in diagnosis of patients' conditions and application of therapeutic interventions. Questions about clinical decision-making were included in the survey on which this thesis is based.

2.3.2 Global state of naturopathic research

In 2017 the World Naturopathic Federation published the findings of a global survey of the state of naturopathy (World Naturopathic Federation, 2017c). The findings show that: 73% of the countries surveyed (n=22) conduct naturopathy research; educational institutes, clinics and non-naturopathic universities participate in naturopathy research; 25 agencies fund naturopathy research and the establishment of over 50 research-based naturopathic journals and databases (World Naturopathic Federation). The World Naturopathic Federation has published a list of research papers authored by naturopaths (or with naturopaths as part of a research team). There are approximately 1175 papers in the list (World Naturopathic Federation, 2017b).

The need to better understand the perceptions and attitudes of CM practitioners towards EBP is an important part of the application of health services research in CM. Whilst studies investigating CM practitioners' relationship to EBP are limited, emerging literature has begun to focus on this important facet of CM practice.

2.3.2.1 Naturopathic practitioners' perceptions of EBP: North America

Although studies of attitudes of naturopaths to EBP in North America have been limited, the need for an evidence base for naturopathic practice has been explored. The *Naturopathic Medical Research Agenda Workgroup* published a report in 2006 calling for increased research in naturopathy, demonstrating a commitment to aligning naturopathy to developing an EBP agenda for the profession (Standish et al., 2006).

The following statement from the Naturopathic Medical Research Agenda is a timely and pertinent one:

> *"We recognize that research on the content (components) of naturopathy (modalities, treatments) is important and relatively straightforward; however, the profession's input repeatedly emphasized that research on the whole practice and its combination of therapies will show the greatest benefit. It also critical at this stage of development that the tools to undertake this kind of research be better developed.*
>
> *Research on the clinical, laboratory, and quality of life outcomes of naturopathic medical care, and evaluation of whole practice (not just treatments or modalities) have been lacking. Most research to date has been on the content of naturopathy on specific naturopathic medical treatments such as Echinacea for respiratory tract infections, homeopathic treatment for HIV/AIDS, and vitamin B6 for carpal tunnel syndrome. Little research has been done on naturopathic medical practice itself, or its context. Examples of naturopathic context research include study of patient-physician interaction and ND work force studies."*
>
> (Standish et al.)

The Canadian Naturopathic Foundation, founded by members of the Canadian Association of Naturopathic Doctors, funds research into naturopathy in Canada (Canadian Association of Naturopathic Doctors, 2021), but there is little information on their web page about the types of research funded.

A phenomenological qualitative study into naturopaths' (n=15) attitudes to evidence-based practice and research, explored the naturopathic students' attitudes towards research, their perception of the naturopathic community's attitudes towards research (and changes in those

attitudes) and personal definitions of EBP (Goldenberg et al., 2017). The participants felt that that the common definition of EBP being confined to published research was too limiting but did think that published research was an important component of EBP applied to patient management in naturopathy. The practitioners expressed the view that attitudes to research within the naturopathic profession had shifted from considerable antagonism (because practitioners considered that research had been used to dismiss naturopathy in the past) to an acceptance of evidence-based information. This finding was mainly evident with the more recently graduated practitioners, but also in the senior naturopaths. This change was considered to have been driven by leaders in the profession and influencers from outside the profession, a need for more credibility, increased exposure and opportunity (for naturopaths); research funding, a global shift in EBP and positive results in research trials (Goldenberg et al.).

There have been explorations into the relationship between CM-based academia in North America and EBP. Collaborations between CM educational institutions and research institutions do occur (Sullivan et al., 2014). Naturopathic educational institutions throughout North America have committed to the development of research in naturopathy, with most having research centres within their institutional framework (Bastyr University, 2021; Boucher Institute of Naturopathic Medicine, 2021; Canadian College of Naturopathic Medicine, 2021; National University of Naturopathic Medicine, 2021; Southwest College of Naturopathic Medicine, 2021). Areas of research that these institutions conduct include nutrition and nutritional medicine, botanical (herbal) medicine, naturopathic practice and case reports. The institutions cited above also include evidence-based practice in their curricula. The National Center for Integrative Health (2021a) in the United States has a grants scheme

for research in CM that is accessible to academic institutions (Menard et al., 2015) and has been running since 1999 (Kreitzer & Sierpina, 2008).

Weeks (2019), in an overview of naturopathy's growing acceptance of the need for evidence, suggests that whole practice (or systems) research could be a growing area for investigating the effectiveness of naturopathy. Weeks also promotes the concept that naturopath should be educated in evidence-informed practice, so that they may become engaged in researching naturopathy, therefore potentially developing a more relevant and applicable evidence base for naturopathy.

An indication of naturopaths' use of EBP was reported in a study in a teaching clinic of the naturopathic degree programme of the National University of Health Sciences, Illinois, an accredited educational institute with the American Association of Naturopathic Physicians. Adult patient records (n=40) were examined to ascertain the use of cardiac condition biomarkers. The authors conclude that the use of biomarkers, which have been validated using scientific research, indicates that such use of these tests among the academic naturopathic profession may help facilitate more integration of naturopaths with CHC. It may also demonstrate that there is a growing commitment to EBP among the academic naturopathic profession (Smith & Faydenko, 2020).

A survey of the managers of CM educational institutions in Canada (n=28, RR 55%), (including 2 naturopathic schools and 10 massage schools), with subsequent telephone interviews (questions developed from the answers in the survey) has been conducted (Toupin April & Gabthey, 2013). Sixty-three percent of the schools employed educators who were involved in research and 50% offered courses in research methods and/or a research project. An analysis of the qualitative data showed that many of the schools were integrating EBP throughout the programmes, but the lack of available researched evidence was a barrier,

which was seen as a potential credibility issue for clinical practices (Toupin April & Gabthey).

A multidisciplinary (oncologists and naturopaths) qualitative study, conducted in British Columbia, Canada, investigated contrasting nutrition beliefs of both disciplines in relation to evidence for the beliefs. The naturopaths (n=4) were purposively selected for their expertise and experience in the treatment of breast cancer in women. Both the oncologists and naturopaths cited evidence to justify their stances on the validity of nutritional influences on breast cancer. However, the oncologists stated that they felt the evidence was not conclusive, whereas the naturopaths utilised both the results of research, their clinical experience, intuition and understanding of nutritional benefits in managing breast cancer patients (Novak & Chapman, 2001).

Naturopaths blogging behaviours were qualitatively investigated in the United States. The findings show that many naturopaths cite evidence in defending their profession against criticisms that naturopathy in the United States is not evidence based (Walden, 2013).

A study of naturopaths in two states of the United States found that over 70% of visits included examinations or diagnostic tests to determine patient health status, potentially indicating an alignment to biomedical evidence as a means of clinical decision-making (Boon, Cherkin, et al., 2004a).

2.3.2.2 EBP in naturopathic education in North America

Naturopathic education in North America includes utilising evidence-based approaches in naturopathic practice (Litchy, 2011), yet there is limited empirically obtained information on how this translates to naturopathic practices in North America. Much of the information presented in this section of the thesis is extrapolated from the published information on

naturopathic educational institutions' relationships to research. This section explores the way in which EBP is taught and practised in naturopathy educational institutions, as those studies may be indicative of naturopaths' general attitudes to, and perceptions of, EBP. Some preliminary studies using CM practitioners in practice have been undertaken and results from the literature are also presented in this section.

Reviewing the research activities of three educational institutions in North America: Bastyr University, National University of Natural Medicine (in the United States) and the Canadian College of Naturopathy, shows that some educational institutions are taking research seriously. Bastyr University is conducting research into integrative neuroscience (Bastyr University, 2020a) and integrative oncology (Bastyr University, 2020b), with six projects in these fields of investigation, whilst National University has listed 17 projects on its research website (National University of Natural Medicine, 2020) covering areas of traditional and complementary medicine, nutrition, mind and body and epidemiology. The Canadian College of Naturopathy (2020) has 8 studies listed on their website.

The curricula of 9 educational institutions teaching CM in the United States (3 naturopathic and oriental medicine, 1 acupuncture and oriental medicine, 2 osteopathic, 3 chiropractic) and receiving research grants from National Centre for Complementary and Integrative Health, were surveyed from 2007 – 2013 to determine their curriculum support for EBP. The results were qualitatively analysed, with four major themes emerging: needs assessments; revisions of curricular; research and evidence-based practice competency assessments and development programmes within the faculties (Zwickey et al., 2014). The results for EBP over the course of the evaluation period show that the evaluators found a shift in the approaches of the educational institutions to EBP and research-informed curricular and tutoring, with librarians taking a key role in the changes. As the project developed, the

compulsory research courses in the CM colleges increased from 8 courses in 6 institutions to 21 courses in 8 institutions, the courses including critical evaluation of research literature, along with elective courses (included journal clubs and advanced statistics). The faculties in the institutions reported using a range of EBP assessment tools to evaluate the students' learning (Zwickey et al., 2014).

2.3.2.3 Naturopathic practitioners' perceptions of EBP: Europe

As identified in the introduction to this chapter, naturopathy evolved in Europe, and European naturopathy is still very traditional in its nature. However, in 2012, 67% of naturopaths in Europe were medical doctors (MDs) (von Ammon et al., 2012), potentially indicating that naturopathy in Europe has been co-opted into mainstream medicine and is using a model of integrative health care heavily reliant on evidence from research. There is some evidence that this is occurring in Germany.

A type of integrative care is available in some hospitals in Germany. This care is delivered under the Operation and Procedure Code, a code prescribed by German law. The code dictates how naturopathy is to be delivered under a complex system (a euphemism for integrative care), which is prescribed on primarily researched evidence-based criteria (Romeyke & Stummer, 2011, 2015).

A report from the Research for Complementary Medicine in the United Kingdom, on a CM practitioners' workshop, which included naturopaths and herbalists, showed that evidence was important to CM practitioners, particularly in assessment of safety (Robinson et al., 2011)

2.3.2.4 Naturopathic practitioners' perceptions of EBP: Australia

A qualitative study with naturopaths (n=12) found that there is a tension among naturopaths (at least in Australia) between what is termed *"traditional knowledge"* and knowledge gained from research. One of the main issues arising from the data was the naturopaths' opinion that much of the knowledge gained from research lacks *"clinical transferability"*, along with a perception that there is limited availability of research in the naturopathic field. However, some interviewees also stated that science can be used to explain traditional knowledge (Steel & Adams, 2011c).

Perhaps the most comprehensive study of Australian practitioners' attitudes and perceptions of EBP was a nationwide study of 126 CM practitioners, including naturopaths (n=57), herbalists (n=11) and homeopaths (n=23). Practitioners of Traditional Chinese Medicine and acupuncture (n=35) were also included (Leach & Gillham, 2011). The questionnaire utilised was EBASE, a validated tool for determining evidence-based attitudes and practices for CM, with a Cronbach's Alpha score of 0.84, which demonstrates validity[26] (Leach & Gillham, 2008). The total respondents were 126 (RR 36%). The respondents were asked questions about their sources of information, opinions of EBP and skill levels related to EBP. The research reporting does not distinguish between the CM disciplines, so the results data for all the practitioners is aggregated. A ranking scale of 1-11 was used to ascertain the most used sources of information. Traditional knowledge was ranked highest (mean 2.6, SD 2.1), textbooks were ranked second (mean 3.5, SD1.8), clinical practice guidelines were ranked third (mean 4.5, SD2.7) and published clinical evidence from clinical trials was ranked fourth (mean 4.8, SD 2.7). Leach and Gillham also report that: 126 respondents gave their opinion of EBP, with 92% of respondents (n=126) agreeing that *"professional literature and research*

[26] A score 0.84 in the Cronbach's Alpha Test indicates good validity, i.e., demonstrates that a questionnaire is a valid tool to utilise for its purpose (Tavakol & Dennick, 2011).

findings are useful in day-to-day practice"; 78% agreed that EBP has a contribution to their clinical decision making; 67.6% agreed that EBP improves the quality of their patients' care; and 73% agreed that EBP is necessary in CM practice. However, 37.3% of the CM practitioner respondents felt that there is a lack of evidence from randomised controlled trials to support their clinical treatments. When questioned on the level of skills in EBP activities (n=120) the CM practitioner respondents stated that their skills were average and above in identifying answerable clinical questions and identifying gaps in knowledge in clinical practice (95.8%), applying researched knowledge in clinical cases (86.7%), critically appraising evidence (80%), using research findings in clinical practice and synthesising research evidence (75.9%) (Leach & Gillham).

Australian naturopathy students' and recent graduates from naturopathic education programmes (n=24) attitudes to EBP were appraised in a qualitative study which investigated the naturopathic students' thoughts on the usefulness of a clinical evidence-based text. The students expressed cautious support for EBP in their assessment of the clinical text, in that there was a preference for the objectivity and trustworthiness of the evidence-based information, but the students felt that they would still be open to other information that had not emerged from research. Most of the students thought that the integration of evidence-based/research informed information could bridge the gap between traditional naturopathic principles and knowledge and modern medical practices, but also wished to separate out what was 'naturopathic information' as compared to biomedical information (Wardle & Sarris, 2014).

Naturopaths and western medical herbalists (n=479, RR not identified) in Australia were surveyed as to their sources of clinical information to determine their approach to EBP (Braun et al., 2013a). The participants' preference was for source material that contained both

'traditional' and scientific information (82%). Fifty-two percent wanted more current information, and 50% wanted information that had a *"scientific basis"*. Sourcing information from peer-reviewed medical journals was reported in only 29%, with 48% sourcing information from databases (such as Medline) and 57% from CM journals. Complementary medicine texts were the most popular at 74% (Braun et al.).

Intuition, deductive reasoning, and clinical experience were emergent themes from a qualitative study of naturopaths' (n=12) approaches to clinical decision making in Australia. Although deductive reasoning was recognised by the participants as being more grounded in research and quite important, there was identification by the participants that clinical experience could be part of an EBP approach (Steel & Adams, 2011b).

In 2018, in Australia, a forum of 17 stakeholders (with CM experience) explored the development of an agenda for strengthening EBP in CM in Australia by examining a set of questions about evidence gaps and priorities for CM in Australia and what could facilitate generation and utilisation of evidence (Canaway et al., 2018). Whilst the participants recognised that there was not going to be evidence on which to base every clinical decision, there was a need for "gathering evidence" about CM, and informing a range of stakeholders, including educators, health care providers (CM and non-CM), media, consumers, industry, and regulators about such evidence. The forum also identified the following barriers to implementation of their recommendations: paradigmatic issues (with different medical systems and approaches to knowledge); lack of definitions about EBP in CM; a dearth of leadership and factionalism within CM; lack of understanding of, and engagement with CM research among CM and non-CM practitioners and consumers; lack of mainstream institutional support and lack of resources resulting from such, and regulatory limitations on CM, with acknowledgement that these are contested (Canaway et al.).

The results of one of the earliest surveys of the Australian CM workforce was published in 2004 (n=795) investigating the practice characteristics of naturopathy/herbal medicine practitioners (Bensoussan et al., 2004). The researchers found that 76% of the respondents identified as naturopaths (n=604), although many of those identifying as naturopaths also identified with other therapies, including herbal medicine, homeopathy, and massage therapy. Regarding the naturopaths' diagnostic methods, conventional medical tests were utilised by 38% of naturopaths/medical herbalists in 50% or more of their consultations. However, 47% of the naturopaths/medical herbalists reported that they used conventional diagnoses (presumably supplied by the patients), with 22.3 using what are termed in naturopathic 'functional' tests[27], approximately 80% utilising traditional testing (iris, tongue and face diagnosis) and approximately 20% utilising what is termed (in the study) 'alternative testing' (electro-dermal screening, muscle testing or live blood analysis) (Bensoussan et al.).

Wardle, Adams, Lui et. al. (2013) conducted a qualitative study of naturopaths (n=20), purposively selected from a region of Queensland, Australia. One of the emergent themes from the study was the experience of the naturopaths that they felt "pressure to move towards an evidence-based paradigm". This was despite the naturopaths' general opinion that there was a value in including researched information into their clinical practices, but that there should not be a "dogmatic" EBP approach, meaning applying only researched evidence, disregarding their 'traditional' practices and clinical "art" of naturopathy. The practitioners also felt that the evidence-based approach was also influencing naturopathic education to "become more scientific" (Wardle et. al).

[27] Functional tests are biometric parameters that generally are validated tests widely used in nutritional medicine, but not necessarily widely utilised in CHC practice (Noland, Drisko & Wagner, 2020).

Investigating information sources utilised by CM practitioners in making clinical decisions has been utilised to examine the application of EBP in practice in several studies.

A qualitative study of 12 naturopaths found that the participants utilised several sources for information that could be applied in clinical practice (Steel & Adams, 2011a). The internet was cited as being an information source by all the naturopaths, but several expressed they were apprehensive about the consistency of internet-sourced information, with PubMED being identified as being the primary source of more reliable information. Textbooks were also identified as information sources that the naturopaths used, particularly if the texts were well referenced. Limiting prerequisites were also considered important for assessing other sources of information, such as manufacturers seminars (need to validate), formal education (quality of lecturers) and interpersonal contacts (levels of clinical experience and personal relationships) (Steel & Adams).

A survey of South Australian naturopaths (n=105, RR 35%) investigated clinical decision-making sources of information, finding that most naturopaths utilise information from CM professional newsletters (91%), followed by reference texts (72%), CPE seminars, from manufacturers of CM products (70%), patient feedback (66%) and observation of patient response (58%). The naturopaths also used journal articles reporting on case studies (43%) and randomised controlled trials (41%) (Smith et al., 2005b). Information on safety issues within CM was mostly accessed through manufacturers newsletters (96%), professional associations (88%) and CPE (69%). Information from the Therapeutic Goods Administration (an Australian Government regulatory body for therapeutic products) was utilised only by 30% of the naturopaths (Smith et al.).

2.3.3 Global state of homeopathic research and EBP

The validity and effectiveness of homeopathy as a therapeutic tool has come under increased scrutiny over the past decade. Some commentators have attempted to offer a detached and balanced critique of the question of homeopathy's effectiveness (Bellavite, 2015; Jonas et al., 2003; Smith, 2011), while other commentators have a more critical view, with most equating the therapeutic benefits of homeopathy to the therapeutic benefits of placebo (Baum & Ernst; Shang et al., 2005). Twelve Cochrane systematic reviews of homeopathic treatment of various ailments are found in the Cochrane Library of Systematic Reviews. A brief scan of the conclusions of these systematic reviews shows insufficient or no evidence of effectiveness of homeopathy in the conditions studied (Cochrane Library, 2021). One systematic review has even found that homeopathy has adverse effects (Posadzki et al., 2012). However, whilst systematic reviews provide meta-analyses of randomised controlled trials, other methodologies have been proposed for studying homeopathy, such as naturalistic inquiry of case studies (Thompson, 2004). Potentially the methodology utilised for homeopathic research could influence homeopaths use of research to determine their clinical approach and remedy selection.

2.3.3.1 Homeopathic practitioners' perceptions of EBP: North America

A comprehensive search of on-line databases and internet articles failed to unearth any studies of homeopaths in North America that covered the scope and specific areas of practice that this thesis has investigated.

Controversy about the scientific validity of homeopathy is very much prominent in the United States. Some commentators suggest that the evidence for the effectiveness of homeopathy is in the process of case-taking (a lengthy interview), providing a *"therapeutic value"* (Nelson et al., 2019). A counter argument is that there are numerous studies of

homeopathy that show a conferred benefit. The apparent support for research in homeopathy from the American institute of Homeopathy (2016), an organisation of homeopaths, would suggest that there is support among the homeopathic practitioners in the United States for utilising an evidence-base for homeopathic practice. Of note, in the United States, a submission has been made recently to the FDA (Whitmont et al., 2020), which is termed a compendium of research in homeopathy, in response to the FDAs proposal to recategorize homeopathic remedies based on evidence of efficacy (Servick, 2015). This compendium possibly indicates some support from homeopaths for establishing an evidence-base for homeopathic treatment (Whitmont et al., 2020).

The limited amount of information is available about the perceptions of homeopaths towards evidence-based practice may suggest a lack of funding could be restricting the development of evidence for homeopathy in Canada (Kelner et al., 2006). Kelner, et. al. identified a lack of cohesion among the homeopathic profession, leading to a lack of information about individual practises of homeopaths in Canada.

A qualitative study of homeopaths in Canada (n=6) found that, whilst the education of homeopaths in Canada had an emphasis on medical sciences, research skills were not a part of the curriculum. The homeopaths also thought that the leaders in the field of homeopathy were not supportive of research into homeopathy and several also thought that a history of homeopathic treatment of 200 years was sufficient proof of the effectiveness of homeopathy (Kelner et al., 2006).

In general, based on available literature, the question of evidence-based practice attitudes or perceptions of practitioners in North America has not been well investigated.

2.3.3.2 Homeopathic practitioners' perceptions of EBP: Europe

Despite homeopathy having its origins in Europe, little information is found in the literature regarding homeopaths use of evidence-based practice. Switzerland has an 'evidence development scheme' for homeopathy, which allows homeopaths to gain insurance coverage (World Health Organisation, 2019b). However, few studies have explored clinical decision-making by homeopaths. A qualitative study of clinical decision-making processes of homeopaths in the Netherlands found that cognitive processes, deductive reasoning, pattern recognition and intuition played a role in selection of homeopathic remedy and case management. Research outcomes were not mentioned in the reporting on the study (Van Haselen RA, Liagre R., 1992, cited in Levy et al., 2010).

A study at a German conference on homeopathy surveyed participants (a mixture of MDs who practised homeopathy and homeopaths who were not MDs; n=118, RR 97%) as to their preferences for sources of homeopathic information. A three-point scale (0 = never, 1 = sometimes and 2 = often) was used, with homeopathic books being the most favourably rated sources of information (mean1.72, SD 0.49), compared to scientific journals (mean 0.98, SD 0.51) (Escher et al., 2012).

Attitudes to EBP in allied health professionals (Physiotherapists, Chiropodists, Dentists, Nurses, Midwives) and CM practitioners (including homeopaths) (total n= 193) have been investigated in the United Kingdom (Hadley et al., 2008), utilising questions about the essential role of EBP in the practitioners' clinical practices. Sixty-five percent of the CM practitioners agreed that EBP was essential to their practices, compared to 81% of allied health practitioners approaches to EBP. To the question of the need for further training in EBP, 93.5% of CM practitioners agreed, compared to 85.9% of allied practitioners (Hadley et al.).

Also in the United Kingdom, a mixed method study (utilising questionnaires and grounded theory) of homeopathic conference attendees' approaches to evidence (n= 38, RR 19%) found emergent themes that showed that homeopaths' personal experience as to what they felt worked influenced their utilising evidence. The homeopaths also: utilised "case studies, practice guidelines, textbooks and seminar notes" as sources of information; rarely utilised published trials; had limited access to, and understanding of, research articles in peer-reviewed journals; and viewed the purpose of research as being to show the public homeopathy works. The homeopaths used research to support their own writing and for quotes, as well as communicating with organisations such as the NHS (Heirs, 2015). These findings are similar to the results of a discourse analysis of United Kingdom homeopaths' websites (n=11), which analysed the homeopaths' approaches to evidence for treatment, identifying a dominant theme of "pragmatic holism". This pragmatic holism meant that the homeopaths utilised the biomedical model for credibility, whilst maintaining a holistic approach that appealed their patients, whilst aligning their practices with the underlying principles of their homeopathic discipline (Givati, 2015).

Intuition in homeopathic decision-making by United Kingdom homeopaths was studied using interpretive phenomenology analysis (a qualitative method). The findings show that for this group of homeopaths intuitive processes for determining treatment were preceded by more deductive reasoning processes (more aligned with EBP), and possibly arise as a result of such processes (Brien et al., 2011).

In some states in Italy, registered CM practitioners must undergo transitional training in both CM methods and *"medical criteria based on evidence"* and *"the capacity to conduct clinical research"* (Rossi et al., 2015).

2.3.3.3 Homeopathic practitioners' perceptions of EBP: Australia

Only one study investigating Australian homeopaths' attitudes to EBP was found for this thesis. A study of sources of information utilised to inform clinical decision-making by CM practitioners in Australia (n= 126, RR 31%) included 23 homeopaths (18.3%). The study ranked sources of information from 1-11 (with 1 being the rank for most used source of information). While there is no identification of separate results for homeopaths, the overall findings show "traditional knowledge' were rated 1, textbooks rated 2, clinical practice guidelines rated 3 and published clinical evidence (clinical trials) ranked 4 (Leach & Gillham, 2011b).

2.3.4 Global state of massage research

There has been a call to establish an international massage research agenda, similar to those developed in the United States and Canada (Porcino, 2013).

2.3.4.1 Massage therapy practitioners' perceptions of EBP and research: North America

Whilst specific quantitative data about individual massage therapists use of EBP in their practices was not found in comprehensive research article databases, the following information indicates that massage therapists in North America are supportive of developing a strong research base for massage therapy.

A qualitative study was conducted at a 2-day symposium in conjunction with the Highlighting Massage Therapy in Complementary and Integrative Medicine Research conference in Seattle, Washington. Thirty-one participants (who were present at the symposium) were invited to take part in the study. Among the assessment tools utilised (in the participants' clinical practices) were validated patient recorded outcome measures indicating that the massage therapists utilised EBP as part of their practices. The description

of how the participants developed a plan of care met the definition of EBP (in massage therapy as well as general health practices) (Kennedy, 2015).

The American Therapeutic Massage Association (the largest professional organisation of massage therapists in North America) is committed to the development of an evidence-base for massage therapy. In a 2002 report the American Therapeutic Massage Association workgroup recommended the building of a massage research infrastructure that could resource massage therapy research and encourage the development of a research literate massage profession and a body of researchers from within the massage profession in the United States (Kahn, 2002). The American Massage Therapy Association has continued to support research over the last two decades with yearly reports and grants for research into the effectiveness of massage therapy (Feather, 2009). However, the latest report about research (American Massage Therapy Association, 2021a) contains no information about the commitment of massage therapists to EBP. In fact, a workshop report from a 2009 United States massage conference identified that research literacy was lacking in massage therapists (Moyer et al., 2009). To date there is little information in the literature as to whether that situation has improved.

Seven United States massage therapists who provided a massage intervention in a multisite randomised controlled trial of massage therapy for knee osteoarthritis were asked a series of qualitative questions about their experience. The massage therapists were open to learning about research and the research process and hoped that research could validate massage for patient reimbursement from medical insurance companies (Perlman et al., 2015).

Whilst evidence-based clinical guidelines have been produced for massage therapists in Ottawa, Canada, and massage therapists were involved in the process of establishing these

guidelines (Brosseau et al., 2012), a comprehensive search of on-line databases found no reporting on the application of these guidelines in massage therapy.

An evaluation to determine the requirements to build and sustain massage therapy research was carried out with Canadian-based (and a few United States-based) participants using semi-structured phone interviews (Kania-Richmond et al., 2017). Emergent themes included: the need for adequate resources (people and funding); the credentials of those involved (researchers, practitioners and institutions); varying perspectives of stakeholders, including the need for collaboration between researchers and massage therapist practitioners; barriers to research (lack of access to resources; the definition of massage therapy as a CM therapy among many questionable therapies; lack of evidence-informed culture within massage therapy; educational institutions unwillingness to embrace the evidence-informed massage therapy concept; and the idea that massage therapy may not survive without the embracing of EBP (Kania-Richmond et al.).

Also in Canada, the massage therapy professional association has included research literacy as one of the competencies required by massage therapists (Baskwill & Dore, 2016). Despite this, the gap between researched evidence and massage practice has been found to be a characteristic of massage therapy in Ontario. A survey of massage therapists (n=160) found that while 91.9% (CI 87.5–95.6) felt that research added credibility to their practice and 78.8% ((CI72.5-85.0) thought that research led to improved patient care, only 50.6% (CI 43.0-59.6) thought that their practices should be based on research, and only 52.8% (CI 46.5-61.6) thought that research training should be mandatory in massage therapy education (Suter et al., 2007). A similar study was conducted in 2013 in Saskatchewan, Canada in 2013. This study found that 97% of massage therapists thought that research added credibility to the profession of massage therapy, but only 58% of massage therapists in the study thought that

massage therapy should be based on research, with 51% agreeing that research should be included in massage therapy education (Gowan-Moody et al., 2013).

Massage therapists (n=43) in British Columbia were asked about their aspirations for massage therapy in a mixed methods study using self-completed questionnaires, focus groups and one-on-one interviews. Only 6% responded that research studies were part of their aspirations for massage therapy (Shroff & Sahota, 2012)

2.3.4.2 Massage therapy practitioners' perceptions of EBP: Europe

A comprehensive search of databases limited to 2000-2021 (Medline, CINAHL) using the search terms *Europe, massage practitioner, evidence-based practice* and produced nil results. In the Science Direct database, the same search was conducted using the filter *full text access*, found 57 articles. A title scan of the found articles resulted in the selection of 4 articles, none of which studied the use of EBP in massage therapists in Europe.

2.3.2.3 Massage therapy practitioners' perceptions of EBP: Australia

There is limited interaction with researched evidence among Australian massage therapists. This situation may indicate that massage therapists have problems accessing research literature but may also indicate that there is insufficient encouragement by professional organisations for massage therapists to develop research literacy (Ooi et al., 2018). Wardle, Barnett and Adams (2015) conducted a survey of members of the Australian Association of Massage Therapists, one of the Australian national massage practitioner organisations (n=301, RR 19.6%). The survey findings showed that research activity by Australian massage therapists was positively associated with the association's approach to continuing professional education (CPE) (p=0.004). Using odds ratios Wardle et. al found that those who exceeded the associations' CPE requirements (for registration with the Australian Association

of Massage Therapists) were 3.28 times more likely to take an active approach to research. Research activity was also associated with those massage therapists who had a higher income (p=0.015). There was no association of massage therapy qualifications with research-associated activity for the massage therapists (Wardle et al.).

2.4 Education in naturopathy and herbal medicine, massage therapy and Homeopathy

2.4.1 Global state of naturopathic education

Little information is available about CM practitioners' perceptions of the impact of their education in their professional practice of CM. Most research in CM education focuses on curriculum characteristics and the development of evidence-informed practices (see the previous section on EBP and CM practice).

In 2016 the World Naturopathic Federation conducted a survey of countries to ascertain the length range (in hours) of naturopathic programmes globally (n=28). This survey identified that there is great variability in naturopathic education globally, which could impact the possibilities for greater integration of naturopathy with CHC. Much of this variability exists within Europe and Latin America, with North America and Western Pacific regions having less variability (World Naturopathic Federation, 2016b). A newly released report on naturopathic education identified 131 naturopathic programmes throughout the world, ranging from 2-year diploma programmes to 4-year professional undergraduate degree programmes.

Dunn, Steel, Adams et al. (2021) conducted an international survey of naturopathic educational institutions (n=63), which found that 63.1% met all three of the minimum guidelines for naturopathic education programmes set by the World Health Organisation

(1500 contact hours, 2 years in length, 400 supervised clinical hours) (World Health Organization, 2010).

2.4.2 Naturopathic practitioners' perceptions of complementary medicine education: North America

Naturopathic education standards in North America are overseen by the Council of Naturopathic Medical Education (2021), which accredits educational institutions in both the United States and Canada (6 in the United States and 2 in Canada). Accredited naturopathy programmes are a minimum of a 4-year undergraduate degree, with graduates able to claim the title *Naturopathic Doctor* (American Association of Naturopathic Physicians, 2012; Canadian Association of Naturopathic Doctors, 2021). Competencies in naturopathic education have been developed by the Association of Accredited Naturopathic Medical College's as a part of a developing professionalisation in naturopathic education (Guiltinan et al., 2015).

The National Centre for Complementary and Integrative Health has developed a research focus for CM education (including naturopathy education) in the United States, with funding given to educational institutions to advance fundamental science and methods, whole person studies, health promotion, evidence of effectiveness of CM interventions and development of a CM and IHC research workforce (Kreitzer & Sierpina, 2008; National Centre for Complementary and Integrative Health, 2021b).

2.4.3 Naturopathic practitioners' perceptions of complementary medicine education: Europe

Naturopathic education in Europe is diverse with programmes ranging from 2000 hours to over 4,000 hours in length. Thirty-six educational institutes are delivering naturopathic education in Europe (World Naturopathic Federation, 2021). A comprehensive research

database search (Medline, CINAHL, Science Direct) and manual searches did not unearth any studies that investigated naturopaths' perceptions about their education.

2.4.4 Naturopathic practitioners' perceptions of complementary medicine education: Australia

Naturopathic education in Australia has developed from 'apprenticeships', through education in private schools (which may or may not be publicly funded) to university degree programmes (Evans, 2000).

The question of evidence has not been confined to naturopathic clinical practice but has also been investigated in several studies (primarily from Australia) in educational settings as well.

The tension between traditional naturopathic/herbal knowledge (and approaches) and knowledge gained from scientific research has been the source of debate and discussion in the literature about naturopathy and herbal medicine education (Leach et al., 2018; Mills et al., 2002; Steel, Peng, et al., 2018; Wardle & Sarris, 2014; Weeks, 2019).

A secondary analysis of qualitative data from a roundtable discussion found that there was consensus among the participants for EBP to be an important factor in CM education but raised questions about what should be included as evidence, making the point that Sackett, Rosenberg, Gray et. al. (1996) stated that evidence should be the "best available external evidence", and this could apply to traditional knowledge as widely applied in CM modalities (Leach et al., 2018).

Naturopathic students expressed the need to find a pathway between traditional and biomedical knowledge in their education, in a qualitative study of naturopathic students in the United States and Australia, emphasising that traditional knowledge requires a "critical gaze" as much as biomedical knowledge (Steel, Peng, et al., 2018).

There is some information about research activities within educational institutions teaching naturopathic and herbal medicine programmes. A survey conducted across CM faculties in an Australian educational institution (Steel, Hemmings, et al., 2015) found that most students saw research as being important to the profession (86.0%) but were not as confident of undertaking research (56%) albeit that research is was considered important to their personal career (86%). The areas of research considered most important to the CM professions were: educational research (95.3%); sociological research (83.9%); clinical trial research (80.9%) and epidemiological research (76.4%). Clinical trials were also considered by 35.4% as being important in their own priorities (Steel, Hemmings, et al.).

Studies that investigated Australian naturopaths' perception of their education were not found in an extensive database and manual search.

2.4.5 Global state of homeopathic Education

2.4.5.1 Homeopathic practitioners' perceptions of CM education: North America

Twelve schools of homeopathy are accredited by the North American Society of Homeopaths (2021).

A survey of homeopaths in Ontario (n=484, RR 58%) found that most (98.9%) were qualified with either a diploma or degree in homeopathy, with 90% holding a college/university qualification (in any discipline). Only 4% of the Ontario homeopaths met the minimum educational requirements for statutory regulation by the Ontario provincial government. Those that did not meet the requirements tended to be older, spent longer years in practice and had a home-based clinical practice. Eighty-two percent believed that homeopaths are well trained in health sciences (Parker, 2013).

2.4.5.2 Homeopathic practitioners' perceptions of CM education: Europe

In 2011 One hundred and fifty-three homeopathic educational programmes were identified across Europe, with 89% of programmes being recognised by a professional association or accrediting body. A survey of homeopathic education programmes (n=85, RR55.6%) found that the total student population in the homeopathic education programmes was 3,967, with mean students in each programme 47 (95% CI 38-56). Only 10 of the programmes were offered on a full-time basis. The survey found that mean teaching hours in the homeopathic programmes were as follows: homeopathy subjects - 600 (SD 289), medical subjects – 332 (SD 298) and clinical training 260 (SD 237), with those programmes that were accredited having more learning hours. The survey found considerable heterogeneity in homeopathic education in Europe (Viksveen & Steinsbekk, 2011).

In the United Kingdom, homeopathic education was initially delivered in private schools, but in the early 1990s began to be taught as an undergraduate degree in universities. However, due to increasing pressure from within and without academia homeopathy educational programmes in universities were gradually phased out (Caldwell, 2017).

A comprehensive search across several databases found no studies of European homeopaths' perceptions and practices related to homeopathic education. However, a qualitative study of homeopathic educators in from 17 different schools in 10 countries of Europe (n=17) has been conducted, investigating their views on the attributes that make a competent homeopath. Emergent themes from the study include good: interpersonal skills; observational and analytic skills; self-development and organisational skills; patient centred attitudes; openness and responsibility. The study also found the at homeopaths should be aware of, and work within their boundaries of competence (Viksveen et al., 2012).

2.4.5.3 Homeopathic practitioners' perceptions of CM education: Australia

In Australia there are 6 schools offering programmes in homeopathy recognised by the Australian Natural Therapists Association (2021a).

A workforce study of Australian homeopaths (n=81), conducted through the PRACI practice-based research network, found that 82.7% held diploma or certificate level qualifications, the remainder having undergraduate or postgraduate degrees (Steel, Leach, et al., 2018).

2.4.6 Global state of massage Education

The World Massage Federation has recognised 140 massage educational programmes world-wide (World Massage Federation, 2021b). Internationally, there have been limited workforce studies in massage practitioners' perceptions of their education. The following information was extracted primarily from massage organisations' websites to present the overall state of massage education across North America, Europe and Australia.

2.4.6.1 Massage practitioners' perceptions of CM education: North America

There are 245 accredited educational institutions teaching massage therapy in the United States (American Massage Therapy Association, 2021c). The Canadian Massage Therapy Council for Accreditation (2021) accredits 10 massage educational programmes, with 24 pending accreditation. Forty-one percent of registered massage therapists in the United States have a bachelor's degree or higher along with their massage qualification (American Massage Therapy Association, 2021b). A survey of registered massage therapists in Ontario, Canada (n=212, RR 33.7%), found that almost half (47.5%) had received a university degree alongside their massage therapy qualification (Ijaz et al., 2020). No studies were found that investigated North American MPs perceptions about their education.

2.4.6.2 Massage practitioners' perceptions of CM education: Europe

Of the 140 World Massage Federation recognised educational programmes 95 are located in Europe (World Massage Federation, 2021b). No studies were found that investigated European MPs perceptions about their education.

2.4.6.3 Massage practitioners' perceptions of CM education: Australia

There are 62 massage educational programmes registered with the Australian Natural Therapists Association (2021b) across all states in Australia. To date there is little information about Australian massage therapists' appraisal of their massage education, although a survey of members of the Association of Massage Therapists (n=301, RR 72.4%) did investigate the massage therapists CPE in relation to completion of requirements and approaches to research (Wardle et al., 2015). No studies were found that investigated European MPs perceptions about their education.

2.5 Regulation in naturopathy and herbal medicine, massage therapy and homeopathy

Regulation of CM practitioners has occurred in some countries but is still to be implemented in many countries. In 2012, 67 member states of the World Health Organisation had regulation for CM practitioners. The figure had risen to 78 in 2018 (World Health Organisation, 2019b). The World Health Organisation has 194 member states (G2H2 Geneva Global Health Hub, 2021). The World Health Organisation has endorsed regulation of CM practitioners across all world regions (World Health Organisation, 2013).

Regulation of CM practice and practitioners has been investigated in many healthcare jurisdictions. A systematic review of international medical stakeholders (both CHC and CM) attitudes to regulation of CM included 54 studies. Of the CM practitioners, the authors found that support for regulation across the studies ranged from 33% - 85% (median 54%), with

opposition to regulation was 8% - 58% across the studies (median 43%). Of the selected studies, only 6 report on CM practitioner attitudes to regulation (Carè et al., 2021).

2.5.1 Global state of naturopathic Regulation

In 12 countries naturopathy is regulated in some form (World Naturopathic Federation, 2018). This figure has not changed since the World Health Organisation report of 2012 (World Health Organisation, 2019b). naturopathy is practised in 225 countries (World Naturopathic Federation, 2016a). The fact that only 5% of countries where naturopathy is practised regulate naturopathy indicates that there are significant barriers to regulation of naturopathy, with potential to negatively impact on integration of naturopathy with CHC.

Since 2004 the World Health Organisation has directed countries to pursue regulation for CM practitioners. The World Health Organisation has identified that some of the same issues that were identified in Ontario still existed in 2013. Some of issues that World Health Organisation (2013) has identified are: lack of research data; lack of appropriate mechanisms for CM practitioner regulation'; lack of financial support for CM research; lack of mechanisms to monitor safety in CM provision; and lack of education and training for CM providers.

2.5.2 Global state of Herbal medicine regulation

As of 2012[28] only 24 countries regulated medical herbalists (World Health Organisation, 2019b). Given the diverse nature of practitioners (from indigenous healers, Traditional Chinese Medicine and ayurvedic practitioners to naturopaths and practitioners of western herbal medicine), it would be difficult to quantify medical herbalist numbers globally. Unlike medical herbalists, herbal medicine products' (preparations from plants and plant materials) global regulations have been mapped recently, with 83 countries having regulations covering

[28] There is not a more current quantification of medical herbalism regulation available.

herbal products (Reddy et al., 2020). New Zealand has a regulatory framework for herbal medicines (Reddy et al.), but not medical herbalists.

2.5.3 Naturopathic practitioners' perceptions of complementary medicine regulation: North America

In 2004 in Ontario, Canada there were efforts to include selected CM therapies into the mainstream health provision of the province. A qualitative study was conducted to determine the views of current (at the time of the study) stakeholders in the existing mainstream health provision. The issues (themes) that emerged were: standards of education and practice; 'credible' evidence of safety and efficacy; what might an integrative system "look like"; co-optation (by CHC over CM modalities); gatekeeping processes (the CHC providers as gatekeepers, with CM practitioners having to receive referrals from CHC practitioners for their practices); how the teams would work; resistance to working with CM from CHC; and opposition to government funding for CM practice, research and education (Kelner et al., 2004a).

In some states in Canada regulation prescribes certain modalities within a profession under scopes of practice, which create 'reserved acts' or 'licensed procedures' (O Reilly, 2000).

Canadian naturopaths (n=882) and homeopaths (n=784) in Ontario were surveyed (quantitively and qualitatively) as to their views of pending registration of their professions. Approximately 75% of both naturopaths and homeopaths were supportive of regulation of their professions, but were concerned about the implementation of the regulations, as well as how they might be represented within the regulatory framework. The respondents also raised issues of administrative and financial concerns about statutory regulation (Ijaz et al., 2015). Patient safety risks within CM practices (in relation to regulation of CM practice in Ontario), was identified as being a critical criterion for regulation (Ijaz, 2020). Ijaz also identifies the

differences in paradigmatic conceptualisation of risk (being that CM views symptomatic phenomena having multiple facets, including physiological and energetic explanations of how symptoms appear and disappear, as compared to the purely physiological determinations that occur in biomedicine) as being a critical issue for CM practitioners' aspirations for regulation.

2.5.4 Naturopathic and herbal practitioners' perceptions of complementary medicine regulation: Europe

A survey conducted in 2020 found only 5 respondent countries in Europe reported some form of regulation of naturopaths (Dunn et al., 2021). To date, no information has been found about European naturopaths' perceptions about regulation of naturopathy, with only one study located reporting medical herbalists' views on regulation.

Medical Herbalists in the United Kingdom were surveyed about some practice characteristics as well as views on regulation (n=55, RR 29%). The medical herbalists were supportive of statutory regulation with 73% in favour, but 43% had concerns about losing some independence if statutory regulation was implemented (Nissen, 2010).

2.5.5 Naturopathic and herbal practitioners' perceptions of CM regulation: Australia

A survey of naturopaths/medical herbalists in Australia (n=479, from a convenience sample through one of the professional associations) asked about the practitioners' attitudes to statutory registration of naturopaths and medical herbalists. Fifty-eight percent of the naturopaths and medical herbalists strongly agreed, with 27% agreeing, 8% unsure and 8% disagreeing or strongly disagreeing. There was significant difference between the practitioners who had graduated more recently (more in agreement) than the practitioners who had graduated earlier ($p = 0.0045$). The practitioners felt that registration would

safeguard the public and raise the credibility and standards of the profession (Braun et al., 2013a).

This contrasts with a previous qualitative study of purposively sampled Australian naturopaths' views on regulation (n=7) that found that the senior naturopaths were both supportive of statutory regulation (rationale: public safety; maintenance of professional standards and facilitation of working with other health care providers) and wary of negative effects of such regulation (rationale: potential restrictions on practices; some form of practice standardisation and greater emphasis on "scientific understanding" versus a "holistic approach") (Canaway, 2009).

2.5.6 Global state of homeopathic Regulation

Whilst homeopathic medicines are regulated in some countries (World Health Organisation, 2019c), few jurisdictions register homeopaths (World Health Organisation, 2019b).

2.5.6.1 Homeopaths' perceptions of CM regulation: North America

In Ontario, Canada just prior to impending regulation of CM practitioners, a survey was conducted of homeopaths' preparedness for the requirements for statutory regulation (n=442, RR 56%). Of the 329 homeopaths who responded to a question regarding regulation: 83.6% thought that regulation would benefit the public, improve quality of patient care and improve the credibility of homeopathy with the public; 83.3% thought that regulation would improve their credibility with other health professionals; 83.0% thought that regulation would have no effect on the numbers of patients seeking homeopathic care; 82.1% supported homeopathic regulation and 83.6% thought that regulation would benefit homeopaths (Parker, 2013)

2.5.6.2 Homeopaths' perceptions of CM regulation: Europe

No studies were located that investigated homeopaths perceptions of regulation in Europe.

2.5.6.3 Homeopaths' perceptions of CM regulation: Australia

No studies were located that investigated homeopaths perceptions of regulation in Australia.

2.5.7 Global state of massage Regulation

The establishment of a World Massage Federation (2021a), (an international organisation that seeks to *"promote a development of massage education*", and "*the theory and practice of massage internationally'*) indicates the maturation of massage therapy, similar to naturopathy This establishment of a world-wide federation also indicates an increased desire for massage therapists to be accepted as a legitimate profession that communicates with a united message to governments, policy makers and CHC. The World Massage Federation currently has 134 education institutional members, in five of the six World Health Organisation world regions (no members in Africa). At the time of writing this thesis, the World Massage Federation appeared to be in a developmental stage, with very little information on its date of establishment or plans for the future.

2.5.7.1 Massage therapists' perceptions of CM regulation: North America

In North America massage therapy is well established and regulated in several states and provinces under licensure systems. In Canada the following provinces regulate massage therapy: British Columbia; New Brunswick; Newfoundland/Labrador; Ontario and Prince Edward Island (Federation of Massage Therapy Regulatory Authorities of Canada, 2021). The minimum educational requirement for licensure is 2200 hours (Canadian Massage Therapist Alliance, 2021)

In the United States 43 states license massage therapists, with varying requirements for educational hours, but the minimum is a 500 hours' course (Associated Bodywork and Massage Professionals, 2021).

No studies were located that investigated massage therapists' perceptions of regulation in North America.

2.5.7.2 Massage therapists' perceptions of CM regulation: Europe

In some European countries massage therapy is a regulated profession, with title protection in several of the countries where it is regulated. In those countries where massage therapy is regulated an approved qualification in massage therapy is required. The European countries where massage therapy is regulated are: Austria; Belgium; Bulgaria; Croatia; Czech Republic; Finland; Germany; Iceland: Italy; Liechtenstein and Lithuania (European Commission, 2021). It is noteworthy that massage therapy has been identified in an analysis of a European-wide study of the regulation of CM as being a high-risk discipline and the *"disharmonised regulation"* of massage therapy (and CM in general) may pose a risk to consumers (Wiesener et al., 2018).

The World Massage Federation has 96 members in the European region, which is the region (along with the United States and Canada) with the greatest degree of statutory regulation of massage therapy internationally. Massage therapy in Europe is centred mainly around spas and wellness centres, with 15 countries having regulated massage therapy (The European Commission, 2021) is also a Europe Massage Association, an association, which acts as a union for wellness massage therapists and spa employees (Europe Massage Association, 2021)

No studies were located that investigated massage therapists' perceptions of regulation in Europe.

2.5.7.3 Massage therapists' perceptions of CM regulation: Australia

In 2011 the Association of Massage Therapists (Australia) made a submission to the Australian Health Ministers Advisory Council about regulating massage therapy. The arguments the association made in support of regulation included: lack of protection of title (meaning anyone could call themselves an massage therapist; lack of barriers to entry into the massage profession; the nature of the therapeutic relationship (with concerns about the risks of having patients potentially partially disrobed when receiving massage therapy); and the lack of disciplinary protections, with massage therapists able to continue practicing even after being disciplined by an association (Association of Massage Therapists Ltd, 2011).

No studies were located that investigated massage therapists' perceptions of regulation in Australia.

2.6 Integration with conventional health care in naturopathy and herbal medicine, massage therapy and Homeopathy

Integration of CM with CHC is linked with the evidence base for CM, educational qualifications, regulatory status of CM practitioners, as well as the safety of CM practices and products. The World Health Organisation, in its Traditional Medicine Strategy, has stated a goal of integrating traditional and complementary medicine with national healthcare frameworks, based around research into effectiveness and safety, and standardising education, and is encouraging regulation of traditional and complementary medicine practitioners in all countries (World Health Organisation, 2013).

2.6.1 The development of integrative health care over the past thirty years

In 1993 one of the first studies of CM practitioners as to how perceived their place in health care in relation to integration with CHC was published (Cant & Calnan, 1991). The qualitative United Kingdom study (n=18) included homeopaths, naturopaths and herbalists as

well as osteopaths, acupuncturists, chiropractors, spiritual healers and hypnotherapists. The participants were asked questions that included those relating to the interaction with CHC (particularly referrals to and from CHC). The researchers reported that there was a range of views among the CM practitioners as to how they were perceived by CHC practitioners (primarily the potential to be perceived as 'unscientific'), with one homeopath commenting that it was mostly those CHC practitioners practising homeopathy themselves, who see homeopathy favourably. The participants could recall only around 5% of referrals (from CHC to their practices) as coming directly from the CHC practitioners. There was also a response from some of the participants that other CM practitioners did not reciprocate their referrals to them. Most of the CM practitioners thought that patients chose their own CM pathway, thereby facilitating their own integration between CHC and CM. Several participants felt that having patients come with a 'diagnosis' from CHC was helpful, as it gave them some direction to their treatment, but some stated that they wanted the freedom to develop their own treatment plans using their own diagnostic methodology, alongside the medical diagnosis. The CM practitioners who participated also located themselves on the integrative continuum, ranging from "separate" and "alternative", to "complementary" and "supplemental" (Cant & Calnan).

2.6.2 Naturopathic perceptions of integration with conventional health care, internationally

2.6.2.1 Naturopaths perceptions of integration with conventional health care: North America

Thirteen years after the aforementioned United Kingdom study (Cant & Calnan, 1991), a qualitative investigation of barriers and facilitators to IHC was conducted in two, recently

opened, IHC centres in Canada. Drawing on the *"closure theory of social interaction"*[29], the author of the study conducted 21 interviews with staff in the two centres (13 biomedical and 8 CM staff), finding that both sets of practitioners operated in virtually separate systems, with a separation of CHC and CM patient records and the CHC practitioners determining the referral process in a type of hegemonic system where integrative care bears little resemblance to either the four-fold or seven-fold models (identified in chapter 1, section 1.3.2). Alongside of this hegemonic system, there was also co-optation of CM approaches by the CHC practitioners (Hollenberg, 2006). At this time integrative centres were being set up across North America.

The results from a series of approximately 75 interviews with staff at 23 academically affiliated integrative medical centres in the United States was published in 2005. Apart from funding issues, the question of EBP in CM, safety of CM therapies (especially herbal remedies) and credentialling or licencing of CM practitioners were factors the medical directors had to consider when developing a team of CM practitioners to participate. The acceptance of CHC practitioners to CM was a process that required skilful communication from the directors and managers, with the need for the establishment of efficacy of the CM treatments a priority. The study found that the vast majority of patients in the centres were self-referred (Ruggie & Cohen, 2005).

2.6.2.2 Naturopaths perceptions of integration with conventional health care: Australia

Semi-structured interviews were conducted with 20, purposively sampled, Australian naturopaths, in which the question of the naturopaths' views on integrating with CHC were

[29] The closure theory of social interaction postulates that a group or profession will utilise professional privilege to draw boundaries to exclude others from having access to resources and rewards (Gale, 2014).

investigated (Wardle et al., 2017). Whilst the participant naturopaths were generally positive about integration of naturopathy with CHC, there were concerns raised that some CHC practitioners were co-opting CM into their own practices, rather than working with naturopaths in a cooperative basis. One of the major concerns with this co-optation was that the CHC practitioners were using CM methods according to the biomedical paradigm, rather than adopting CM philosophies and principles as a framework for practising CM. The naturopaths also wanted better communication between CHC practitioners and naturopaths in relation to the patients that they shared with CHC practitioners. The naturopaths also expressed that many patients prefer to keep CHC treatments and processes separate from CM processes, a type of *"protection of their different social worlds"*. However, the naturopaths acknowledged that this separation could potentially be dangerous for the patient, in that the lack of knowledge of each practitioner (naturopaths and CHC practitioners) could result in harm to the patients (such as interactions between medicines, etc.). The naturopaths identified that the lack of integration in the current situation was due to the lack of "formalised integrative pathways", especially for referrals. The naturopaths felt that their "good faith approach to integration" was not reciprocated by CHC practitioners (Wardle et al.).

2.6.3 Global state of homeopathic Integration

Homeopathy has been part of IHC internationally, albeit in a limited fashion (probably due to a perceived lack of evidence for effectiveness) (Bellavite, 2015; Block & Jonas, 2006). However, a search of electronic databases failed to unearth any studies of homeopaths' views on IHC or homeopaths referrals to CHC. Two studies investigating GPs' referrals to homeopathy were found. A study of rural GPs in New South Wales, Australia (n=49, RR40.7%) found significant resistance to referring to homeopathy from the participants. Only 8.6% of the GPs referred to homeopathy, with only 2.1% referring at least once monthly

(Wardle, Adams, et al., 2013). A much older study in the United Kingdom investigated GPs referrals to CM, including homeopathy (n=304, RR 56.3), with 210 GPs stating that they had referred patients to homeopaths, being the most popular of all the CM disciplines for referral from the GPs. Interestingly, 43 of the GPs stated they would like to train in homeopathy and 49 stating they had already received training in homeopathy (Wyllie & Hannaford, 1998).

2.6.4 Global state of massage Integration

2.6.4.1 Massage therapists' perceptions of integration with conventional health care: North America

Registered massage therapists (who also practised acupuncture) in Ontario, Canada (n=212, RR 33.5%) were recently surveyed across several areas of practice. The massage therapists were asked about their referrals to and from other CM practitioners as well as CHC practitioners. Referrals from other CM practitioners were as follows: 25% received referrals from massage therapists, 19.3% from chiropractors, 6.1% from naturopaths, 1.4% from Traditional Chinese Medicine practitioners. Referrals from CHC practitioners were 12.8% from GPs, 5.1% from dentists and 19.9% from physiotherapists. The massage therapists in the survey referred to other CM practitioners as follows: 9.2% to other massage therapists, 17.9% to chiropractors, 7.6% to naturopaths, 28.3% to Traditional Chinese Medicine practitioners. Referrals to CHC practitioners were: 7.6% to GPs, 1.6% to dentists and 20.1% to physiotherapists (Ijaz et al., 2020).

Paediatricians in the United States were surveyed within a conference environment (n=175, RR 74%). Referral to massage therapy was found in 19.3% of the respondents (McLellan et al., 2005).

2.6.4.2 Massage therapists' perceptions of integration with conventional health care: Europe

No studies were located that investigated massage therapists' perceptions of integration in Europe.

2.6.4.3 Massage therapists' perceptions of integration with conventional health care: Australia

Referrals from rural GPs (n=585, RR 40.7%) to massage therapists in Australia were the subject of a study across rural areas of New South Wales. The study found that 12.5% of the GPs referred patients to massage therapy at least weekly, with 20.3% monthly, and 43.8% a few times per year. Referrals to massage therapist from the GPs were associated with: knowledge about massage therapist ($p<0.001$); patient requests ($p<0.001$), personal use of massage therapy ($p<0.001$), previous positive results ($p<0.001$) and belief in efficacy ($p<0.001$) (J. Wardle, David. Sibbritt, et al., 2013).

No studies were located that investigated massage therapists' perceptions of integration or referral to CHC in Australia.

2.7 Alignment with national health goals in naturopathy and herbal medicine, massage therapy and Homeopathy

2.7.1 Global state of naturopathic Alignment with national health goals

After a comprehensive on-line search no information was found about naturopaths' alignment to national health goals in North America or Europe.

2.7.1.1 Naturopaths' perceptions of alignment with national health goals: Australia

Eight health service managers (recruited using purposive sampling) in Australia were interviewed in a qualitative study that investigated the participants' perceptions of the role of CM in health care. The participants perceived that the "holistic approach" of CM was an important factor in the incorporation of CM services into their health service provision, as

well as filling “therapeutic gaps” in such provision of health services (Singer & Adams, 2014).

2.7.2 Global state of homeopaths’ alignment with national health goals

After a comprehensive on-line search no information was found about homeopaths’ alignment to national health goals in North America, Europe, or Australia.

2.7.3 Global state of massage practitioners’ alignment with national health goals

2.7.3.1 Massage therapists’ perceptions of alignment with national health goals: North America

Although no specific studies involving massage therapists in North America show alignment to government stated national health goals, one study investigated massage therapists’ inclusion of health promotion within the massage therapists’ practices. A cross-sectional survey, conducted with massage therapists (n=182, RR not stated), found that 90.2% of massage therapists agreed that massage therapists should provide health promotion, with 50% believing that massage therapists should spend more time in their practices providing health promotion messages or advice (Kennedy et al., 2018).

After a comprehensive on-line search no information was found about massage therapists’ alignment to national health goals in Australia or Europe.

2.8 Conclusion

The above review has highlighted several important gaps in the investigation of CM practitioners' perceptions and practices in the areas of research and EBP, education, regulation, integration with CHC and CM practitioners' alignment to national health goals. These domains of inquiry are those on which this thesis is centred, and the lack of available information about CM practitioners' involvement in these critical facets of healthcare highlights the importance of the findings of this thesis. Of note are the areas of: CM practitioner' perceptions of their education (and how these might translate into CM practice); CM practitioners' perceptions of IHC and the referral practices that CM practitioners conduct, along with the CM practitioners' alignment with national health goals, all areas that are well investigated by this thesis.

2.9 Chapter Summary

Chapter 2 of this thesis has reviewed literature related to the four domains of inquiry that are central to the study on which this thesis is based. The chapter began with a summary of the distribution of the CM disciplines of naturopathy and herbal medicine, homeopathy and massage therapy across World Health Organisation designated world regions. An overview of the above disciplines followed, with a brief historical summary, along with a description of the current state of the disciplines internationally.

The chapter progressed with a review of current literature about research and EBP, education, regulation, integration, and CM practitioners' alignment to national health goals. The scope of this review was the CM disciplines of naturopathy and herbal medicine, homeopathy and massage therapy in North America, Europe and Australia. The chapter concludes with an identification of the gaps in the literature, indicating the value of the study on which the thesis reports.

Chapter 3 Complementary medicine in New Zealand: Historical and current contexts

This chapter outlines the development of CM and IHC in New Zealand from the pre-colonial era to the present day. The historical context of CM in New Zealand is described, identifying how this context influences the nature of CM in the contemporary health care system in New Zealand. The historical background reaches back to pre-colonial days and includes a brief overview of traditional Māori medicine - termed *rongoā Māori*[30] and the cultural context in which it was practised, and the potential influence of rongoā Māori on current CM practices and issues.

Throughout the 19th century there was considerable development in the provision of healthcare to the growing population of New Zealand. What is now termed CM was prominent in 19th century New Zealand but growing professional and legal attempts to outlaw CM practices and practitioners (from conventional medical practitioners) influenced a decline in the provision of CM to the population at large in the early part of the 20th century. The early history of CM in New Zealand is outlined with its implications for how CM is situated currently identified. The impact of the history of CM in New Zealand will be shown to have influenced the legal status of CM in the present.

The current status and popularity of CM is presented, particularly that of naturopathy, herbal medicine, homeopathy and massage therapy. There is also a focus on the findings of a government committee into complementary medicine, which provided some of the inspiration for this thesis.

[30] Most literature refers to traditional Māori medicine as *rongoā Māori*, which is actually the Māori term for the use of plants as medicine. This thesis will use the term rongoā Māori, to match the common usage for traditional Māori medicine.

The last part of this chapter will include a systematic literature review of published papers related to CM use in New Zealand, with a focus on the perceptions of, and interactions with, CM among conventional healthcare practitioner practitioners in New Zealand.

3.1 Historical development of complementary medicine in New Zealand: from precolonial to modern contexts

3.1.1 Rongoā Māori: indigenous medicine, cultural context, and impact on the development of complementary medicine in New Zealand

Prior to colonisation, Māori (indigenous New Zealanders) developed a form of health care that was complex, sophisticated, and holistic. Developing out of Māori cultural traditions and spiritual beliefs, traditional Māori medicine is a health system utilising diagnostic and treatment methods that incorporate physical, mental, and social aspects of health that retains relevance and influence in current health care for Māori (Ahuriri-Driscoll et al., 2008). Whilst very much emerging from Te Ao Māori (the Māori world view), many of the treatments, such as *mirimiri* and *romiromi* (massage and body therapy modalities) and *rongoā* - the use of medicinal plants (Jones, 2000), have similarities (as well as culturally based differences) to western CM methodologies, philosophies and theories (Hausser et al., 2017; Smith et al., 2010). Just as several of the modalities of CM are now being defined as medical systems (National Centre for Complmentary and Alternative Medicine, 2014), in that they derive from the relationship between human beings and the world around them (Chi, 1994), rongoā Māori is an indigenous medical system that integrates spiritual, societal, cultural and environmental aspects of wellbeing (Durie, 1985).

Holism is a fundamental principle that is shared across the Māori approach to health and CM, particularly within the philosophical basis of naturopathy (Hausser et al., 2017). As such, rongoā Māori is considered a CM discipline within the framework of health care services in New Zealand (Koopman-Boyden et al., 2004).

Central to rongoā Māori practices in pre-colonial times, were the *tohunga*[31] (Jones, 2000). With colonisation, traditional Māori medical practices came into conflict with the prevailing commercial and political aspirations of the colonists. Documents and writing from colonial times (1800-1900) show varying views of Māori health and health care practices (including dietary practices) that reflect the hegemony of the European settlers over the Māori, and the often-patronising way they described Māori health (Nicholson, 1988). This hegemonic approach continued into the twentieth century and culminated in the *Tohunga Suppression Act* ("An act to suppress Tohungas," 1907). This act had the effect of driving Māori healers underground and, although the tradition of rongoā Māori altered according to the changing circumstances for Māori, the traditions endured, and their principles and practices, grounded in cultural concepts, have a strong influence in current Māori society today (Evans et al., 2008a; Nicholson, 2006). In many Māori communities, rongoā Māori has prevailed to be the main health care choice for Māori (Ahuriri-Driscoll & Boulton, 2019).

3.1.2 Traditional Māori medicine has influenced complementary medicine in New Zealand

Traditional Māori medicine has influenced CM practice in New Zealand in several important ways. Two of New Zealand's prominent 19th century herbalists: Mother Suzanne Aubert and James Neil utilised many native plants, drawing from information passed on by local Māori healers (Bishop, 2014). Later publications from Māori and Pākeha (European New Zealander) authors have focused on traditional plant remedies utilised by Māori (Kerridge, 2018; MacDonald, 1973; McGowan, 2009; Riley, 1994). Several naturopaths and medical herbalists also incorporate rongoā Māori into their practices (Falk, 2020; Gianstefani, 2020;

31 Tohunga is a Māori term for the tikanga kaitiake (guardians of cultural knowledge) and tapu kaitiake (guardians of sacred knowledge and healing) among Māori society, essentially the health practitioners within the Māori social order. They were highly revered and respected individuals, who had a special place in Māori society (Leske, 2007).

Renaut, 2015). In 1999 the New Zealand Ministry of Health introduced standards for rongoā Māori providers, addressing (among other aspects) referrals between health providers, record keeping and, most importantly, cultural considerations around collecting plant material and how these processes relate to the Medicines Act (1981). These standards govern how health care is administered to the patients of the practitioner (New Zealand Ministry of Health: Manatu Hauora, 1999).

In 1999 the Associate Minister of Health acknowledged rongoā Māori's place within health care and CM, when she inaugurated the standards.

> *"It is timely to re-emphasise that there is a place for Rongoā Māori in New Zealand's health sector. In terms of modern medicine, often where they can today, doctors are recommending natural remedies in conjunction with, or sometimes in place of, orthodox medical practices such as chemical drug treatments.*
>
> *Internationally, every community in the western world has access to well qualified herbalists and natural healers. Internationally, indigenous health systems and practices are being discussed and debated. In particular, questions are being asked about how traditional health systems can contribute to better health; improve health status and quality of life; and enhance service delivery.*
>
> *The numbers of Māori consumers who are choosing Traditional Healing, as an alternative or complementary service, is testament to the value people place on this care and the benefits they see that traditional practices offer to them... Increasingly in recent years, GPs, traditional healers and Māori nurses have been working alongside each other to provide a range of services that people feel comfortable in using."* (Te Heuheu, 1999)

The Ministry of Health currently funds 20 providers of rongoā Māori in New Zealand (New Zealand Ministry of Health : Manatu Hauora, 2020).

This thesis suggests that the principles articulated by Ms. Te Heuheu, in respect of herbalists and natural healers having a contribution to nationwide health care, can be considered as applicable to contemporary CM modalities in New Zealand. Many of the principles behind rongoā Māori apply to all CM modalities in New Zealand. The holistic and individualised nature of rongoā Māori (Durie, 1985) is reflected in CM (McKee, 1988; Robinson et al., 2009).

3.1.3 Complementary medicine in the nineteenth century post-settlement era: pioneering practitioners

With the colonisation of New Zealand by Britain, and the influx of settlers from several European countries, the range of medical modalities prevalent in Europe and the Americas, including what is now termed CM along with the mainstream medicine of the time (markedly different from conventional healthcare practitioner today) began to grow within the young colony. The migration of Chinese people (initially working the goldfields and, post-gold rush, farming) brought Traditional Chinese Medicine (Traditional Chinese Medicine) and acupuncture to New Zealand as well (Pollock, 2018a)[32]. This brief historical outline focuses on four CM modalities: homeopathy; herbal medicine; nature-cure/naturopathy and massage, but also includes relevant historical information about osteopathy and chiropractic.

3.1.3.1 Homeopathy in 19th and early 20th century New Zealand

With the colonisation of New Zealand in the nineteenth century the settlers brought medicines and medical practices that were prevalent in Europe and the Americas.

[32] Traditional Chinese Medicine and acupuncture were largely confined to treating patients from the Chinese community (Pollock, 2018a).

Homeopathy was an early medical practice introduced into New Zealand. One of the first New Zealand hospitals (in any medical system) was a homeopathic hospital established in Auckland in 1858 (Gluckman, 1979; New Zealand Council of Homeopaths, 2015). The first medical journal in New Zealand was *The Homeopathic Echo*, initially published in 1856 (Ruggie & Cohen, 2005). Another homeopathic publication in nineteenth century New Zealand was Marshall's Homeopathic Guide (1884), which was published by a New Zealand pharmacist and had 5,000 copies printed (Griffiths, 1997). It is perhaps not surprising that homeopathy was popular among the colonial peoples, given its popularity in Europe and the Americas in the nineteenth century (Loudon, 2006; Waisse & Eklöf, 2019). A search of the archive *Papers Past* (an on-line database of New Zealand historical newspapers) for occurrences of the term 'homeopath' found 223 results, with a mixture of advertisements as well as stories about daily life, illustrating the extent to which homeopathy and homeopathic medicines were widely utilised as part of the spectrum of health care in nineteenth century New Zealand (National Library of New Zealand, 2020).

3.1.3.2 Herbal medicine in 19th and early 20th century New Zealand

Herbal medicine was also popular with the New Zealand population in the 19th century. One renowned personality was Mother Suzanne Aubert, a French nun who brought her knowledge of European herbal medicine to New Zealand, applying this knowledge to the development of medicines based on rongoā Māori, and utilising New Zealand native plants prepared into bottled medicines in the traditional manner of western herbal medicine. Aubert worked among the Māori communities and is well known for founding the Sisters of Compassion order of New Zealand Catholicism (Aubert, 2009). Her herbal remedies were described in a newspaper article as "the wealth of New Zealand" (Grey River Argus, 1891), which indicates the respect for Suzanne Aubert's skills as a medical herbalist, as well her innovative use of

New Zealand native plants for medicines. In 1881, 3 herbalists were listed in the national census. By 1901 this number leapt to 36 (Belgrave, cited in Bishop, 2014).

The New Zealand Family Herb Doctor, written by a Scottish doctor James Neil (1889), was first published in 1890. The front-piece by Neil describes it as:

> *".. a book on the botanic eclectic system of medicine, containing the latest discoveries in medicine and surgery, for the cure of disease: also, a description of the herbs, roots, barks, seeds, extracts, essential oils, etc. with 100 (six-coltheed) plates of the most important medicinal plants growing in New Zealand, Australia, and elsewhere, together with numerous carefully selected valuable remedies, recipes, &c. with a successful treatment for horses and cattle, dogs, etc…"* (Neil).

Neil was resident in Dunedin and attended Otago Medical School (albeit briefly as there was a strong anti 'quack'[33] sentiment prevalent at the medical school and Neil was committed to herbalism as a pathway to health). He described himself as New Zealand's first herbalist (Bishop, 2014), practising in Dunedin after spending time learning the trade from a woman herbalist in Melbourne, Australia, who introduced Neil to the Thomsonian[34] method of herbalism, pioneered by Samuel Thomson in the United States in the early 19th century (Neil, 1889). His interest in the Thomsonian method led to him gaining a qualification from Bennett Eclectic College (Chicago, United States)[35] in 1883. The *New Zealand family Herb Doctor* had three editions and had sold 5,000 copies by 1891 (Griffiths, 1997).

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[33] The word 'quack' was first used by a 18th century by a physician Francis Guybon, who ascribed it to a person who practised medicine without medical education or knowledge that included the classical medical texts (Loudon, 2019).

[34] The Thomsonian method was developed in the mid-west of the United States by Samuel Thomson, who developed the method based on traditional European and Native American herbalism principles

[35] Eclectic medicine had its origin in the United States, rising out of Thomsonian medicine and as a counter to the 'heroic medicine', popular in the day (bloodletting and purgation being the most common treatments for

The popularity of herbal medicines in 19th and early 20th centuries New Zealand, is evidenced by the widespread provision of herbal remedies through dispensaries stocking Neil's remedies and other herbal manufacturers' medicines. A search of *Papers Past*, using the search term *herbal* and limited to the years 1839-1899, found 1,351 listings. Of these 1323 were advertisements and 28 were articles (National Library of New Zealand, 2020). The articles range from testimonials to reports of court cases (including one where Suzanne Aubert sued Kempthorne Prosser over the rights to a herbal formula), book reviews of *The New Zealand Family Herb Doctor* and miscellaneous mentions of herbalists or herbal medicines. One of the articles alludes to the proliferation of herbal medicine in New Zealand and is reproduced below.

Fig 3.1 Typical article about CM practices in the 19th century in New Zealand (The New Zealand Observer, 1881).

Herbalist doctors are springing up everywhere. A new one has started in Hobson-street, but we certainly caution people to be very careful how they use herbs as a medicine unless given by an experienced hand. As a medicine they are simple and efficacious, but so many accidents have occurred through ignorant persons administering herbal remedies that it behoves everyone who prefers herbal medicine to ascertain they are being applied by a person who thoroughly understands his business. The only person we know of in Auckland qualified by experience and long practice to prescribe for this trnly admirable course of medicine, is Professor Guscott, of Shortland-street, whose fame as a herbalist doctor is renowned over New Zealand.

The initial statement in this newspaper article regarding the popularity of herbalists is evidently true, as several 19th Century New Zealand herbalists have been identified by Bishop (2014), including: Dr Westwood, H. Barraclough, Richard Ayres, H. Britton, James Nosworthy, Professor Thomas Guscott, Professor Ellis and E. W. Hall. Another herbalist, W.

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fevers and other ailments). The eclectic medical colleges were co-educational (a radical notion for the time) and taught a variety of herbal and lifestyle treatments, based on physiological and anatomical principles (Haller, 1999).

Syms in Woodville, was also identified through a newspaper data search (Woodville Examiner, 1891).

3.1.3.3 Nature cure: the precursor to naturopathy in 19th and early 20th century New Zealand

Nature cure is a term that was utilised 19th and early 20th century, and was really a forerunner to naturopathy, which emerged in the early 20th century. This term was widely used for natural healing methods in several countries (Alter, 2015; Brown, 1988; Lindlahr, 2005; Mabey, 2008; McCabe, 2000; Whorton, 2002).

It was a somewhat generic term in New Zealand, in that it was used to encompass a wide range of healing practices, including hydropathy[36], nutritional (dietary advice and supplementation) and lifestyle modification.

A search of Papers Past (National Library of New Zealand, 2020) using the term *nature cure*, and limited to the years 1839 to 1920, found 344 articles, of which 323 were Articles in newspapers, published between early 19th century to 1920, show the varied therapies that were commonly grouped under the umbrella term of *nature cure*. These articles included: herbal medicine ("Put it off until too late," 1913); lifestyle advice ("Nature's restorative powers," 1899); specific advice for medical conditions ("There is great danger from constipation," 1901); massage ("Medical massage," 1907); specific diets ("Milk diet cure," 1906); general health advice ("Health hints," 1907) and hydropathy ("Water as a curative," 1902). This range of therapies is strikingly similar to modern CM modalities utilised currently in New Zealand (particularly naturopathy).

[36] Hydropathy is a term used for treatment using the therapeutic properties of water in various ways, including changes in temperature. It has been an integral part of naturopathic treatment since the early 20th Century (Hausser, et. al., 2017).

From a perusal of newspaper advertisements in the 19th century, it is evident that there were 'hydropathy' clinics in at least 3 of the main cities: Auckland (Advertiser, 1891); Christchurch (The Star, 1889) and Wellington (Evening Post, 1884).

Many doctors who were considered to be practising the conventional medicine of the time used methods that were also utilised by the those who practised outside the bounds of 'conventional medicine' (Duke, 2005).

3.1.3.4 Conventional medicine fights back: regulative and legislative attempts to ban CM, through labelling it quackery

The date range of the previously cited articles about the range of CM practices (a sampling of the many newspaper articles) which, along with the advertisements that were found in the search of *Papers Past* database, indicates that attempts to suppress CM, in the 19th and early 20th centuries, had little effect on the CM practitioner activity that occurred at this time. Such a situation where there was a wide range of therapeutic options for the public was bound to create a backlash from the 'regulars'. The beginning of the push back against the 'irregulars' was a move to regulate medical practice through legislative acts[37].

3.1.3.5 The Medical Practitioners Act

To create a legitimation of the 'regulars' in the mid-1800s, legislative moves were taken to regulate those practitioners of medicine that conformed to certain views about what medical practice ought to be, to the exclusion of 'alternative' and 'domestic' medicine. This was a direct consequence of the initial registration of medical practitioners in Britain in 1858 and followed failed attempts to register medical practitioners in several of the provinces as well as

[37] The terms 'regular' and 'irregular' were commonly used in many countries to distinguish between those practitioners who were deemed to practise 'scientific medicine' and those who were outside that framework (De Ville, 1992)., however, for many practitioners, the methods were similar (Appel, 2010). In the mid-1890s 20% of 'regular' practitioners used some form of CM (Duke, 2005).

nationally, opposed primarily by the homeopaths and their supporters (Wright-St Clair, 1987). It is therefore not surprising that the move to register 'regular' medical practitioners was particularly aimed at the homeopaths, who were seen as rivals for medical customers (Belgrave, 1985). The move to register medical practitioners culminated in the *Medical Practitioners Act*, designed to regulate who could practice medicine in New Zealand.

> *"23. From and after the coming into force of this Act the words "legally qualified medical practitioner" or "duly qualified medical practitioner" or any words Importing a person recognised by law as a medical practitioner or member of the medical profession when used in any Act or Ordinance in force m the Colony of New Zealand shall be construed to mean a person registered under the said Acts specified in the said Schedule D. or registered under this Act."* ("An act to constitute a medical board for the colony of New Zealand and to define the qualifications of practitioners in medicine and surgery," *1867)*

The act provided for 'assessors' for each province, but the assessor appointed by the Governor (of New Zealand) in Nelson was a homeopath (as well as being a regular doctor) and it became obvious that the legislation would not have the desired effect of side-lining the 'irregulars', and the initial Medical Board was abolished, with the role of registering medical practitioners being given to the registrar of births, deaths and marriages. Those who had been practising medicine prior to 1867 were given exemption to be registered under the act[38], and several applied and were granted registration. This act did not outlaw the practise of medicine by the 'irregulars', it simply granted registration to the 'regulars', a situation that still exists currently in New Zealand law (Wright-St Clair, 1987).

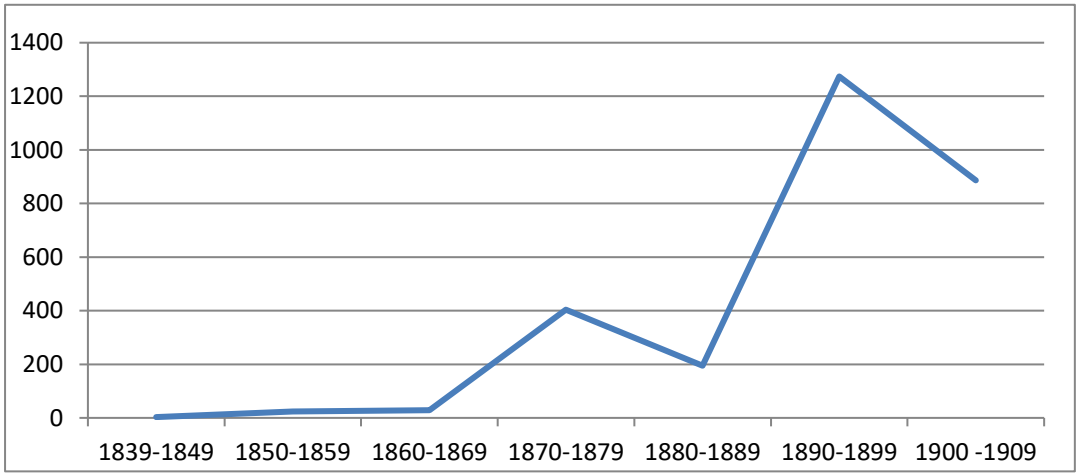
[38] Although not without opposition from many in the profession, but there was no unified voice on this issue (Wright-St Clair, 1987).

The Medical Practitioners Act did not appear to be effective in the regulation of medical practices, as can be seen by the growth of homeopathy, herbal medicine and nature cure practitioners after its passing. This led to a growing call to further 'penalise' the 'irregulars' (often deemed the alternatives[39]). The derogatory term 'quackery' was quickly adopted to become the catch-cry for the de-legitimation of what we now term CM practices and practitioners. It is pertinent to consider that, given the medical education of the 19th century, many herbalists, homeopaths and other practitioners deemed 'alternative' or 'quacks' were at least as well educated in medicine as the 'regulars' (Bishop, 2014). This did not hinder the efforts of the medical establishment and politicians to 'outlaw' CM practitioners and practices.

3.1.3.6 Allegations of 'quackery' a looming threat

However, popular as CM was, there was a growing threat to its legal status over the ensuing years of the 19th century. An analysis of newspaper articles (1839-1909) mentioning the term 'quackery' (used in the medical context) in their titles is presented in Fig 3.2.

Fig. 3.2 Charting the incidence of the term 'quackery' or 'quack' in New Zealand newspapers by decade from 1839-1909



[39] The term 'alternative' is in common usage to name CM. This term has often been attributed to the rise of the 'counter-culture' in the 1960s and 1970s Saks, M. (2018). However, the term may be older than that and have its origin in the derogation of CM, rather than a term from the 'counter-culture

It is evident from this progression of calls in newspaper articles for the outlawing of *quackery* that there was a groundswell of opinion to eliminate the 'irregulars'.

New Zealand's first medical society was formed in 1873, and not long after, amalgamated with the British Medical Association. The amalgamated association was termed the New Zealand British Medical Association and began to pursue those medical practitioners, who were registered under the 1867 act, but deemed to be practising 'irregular' medicine, including rongoā Māori (Bishop, 2014; Wright-St Clair, 1987). The division between 'regulars' and 'irregulars' was officially sanctioned in the 1874 census (Simkin and Hardie, 1954, cited in Bishop, 2014). The response from the 'irregulars' was to form their own medical societies (known as Friendly Societies), who continued to be rivals (economically and medically) of the 'regulars' of the New Zealand British Medical Association (Wright-St Clair, 1987). However, the consistent lobbying of the government by the New Zealand British Medical Association, supported by an increasing public voice for the outlawing of 'quackery' (see Fig 3b), led to the passing of the *Quackery Prevention Act* in 1908 ("An Act to prevent the Practice of Quackery," 1908).

It is of note that it was only a year before this that the *Tohunga Suppression Act* ("An act to suppress Tohungas," 1907) was passed. Some members of parliament felt that this act should apply to Māori and Pākeha alike, but that decision was not taken up by the government. However, the next year the *Quackery Prevention Act* was passed (Stephens, 2001).

Despite the attempts of conventional medicine to quash the 'irregulars', most prosecutions under the *Quackery Prevention Act* were unsuccessful due to practitioners being able to produce 'evidence' of effectiveness of remedies, mainly based on testimonial references (Norris & Beresford, 2018).

3.1.4 Complementary medicine developments in New Zealand: the twentieth century

Whilst the *Tohunga Suppression Act* was repealed in 1962 (bpac nz, 2008), It is noteworthy that, when in force, it was utilised by the New Zealand Government to suppress other Māori cultural practices and political movements, areas well outside the original intentions of the act (Durie, 2000). This suggests that the intent was not only aimed at medicine, but a wider suppression of Māori in general. The *Quackery Prevention Act* was largely ineffective except for encouraging an adverse view of CM practitioners among the orthodox medical establishment (Bishop, 2014).

3.1.4.1 The early 20th century: complementary medicine in New Zealand is quietly building

The growth of CM in New Zealand in the twentieth century was probably negatively influenced by the implementation of the *Tohunga Suppression Act* ("An act to suppress Tohungas," 1907) and the *Quackery Prevention Act* ("An Act to prevent the Practice of Quackery," 1908), as little is recorded of CM practitioner activities in the early twentieth century. Practitioner numbers were small as indicated by one study. Using Yellow Pages and Wises phone directories, Gilbey (2005) attempted to map the growth in practitioners in Auckland and Dunedin, finding a flat growth pattern in CM practitioner appearances in the directories until the 1990s, when the practitioner numbers (in the directories) rapidly increased. In 1918, only two chiropractic practitioners[40] were found to be advertising in Dunedin., with none in Auckland. Considering the limitations of the methods used in this study, this result could be the sum of all practitioners in New Zealand at that time that could be identified. In 1976 there were practitioners in acupuncture (2), chiropractic (45), hypnotism (14), natural (this term seems to be a generic term but could include naturopaths

[40] Although the first chiropractic practitioner was Tom Giles, who practised in Dunedin from 1910 (Pollock, 2018c). ibid., chiropractic began to develop in New Zealand after World War I (Duke, 2005).

and herbalists) (9), and osteopathy (8). By 2008 the numbers were: acupuncture (103), chiropractic (153), hypnotism (48), natural (344), and osteopathy (119) and homeopathy (57). This increase in practitioner numbers potentially indicates the growth in popularity of use of CM practitioners. Whilst Gilbey's study is limited, in that it relies on data about practitioners advertising their services in the two directories, the results may be indicative of the growth patterns of CM practitioners in New Zealand.

3.1.4.2 Massage therapy a profession adopted from conventional care

A notable omission in Gilbey's study is the profession of massage therapy, which has its origins in New Zealand within conventional healthcare. It is only in relatively recent times that massage therapy has emerged as a separate health discipline (and recognised as a CM modality) and become a significant profession within CM, existing outside the conventional healthcare.

The first recorded information about the beginnings of massage therapy, is from 1913 when a School of Massage was established at Otago Medical School, Dunedin. This school has now become the Otago University School of Physiotherapy (Smith et al., 2012). In 1920 an act of the New Zealand parliament registered massage therapists and established a Massage Registration Board. This act allowed for registration of persons (male and female) who had either: been practising massage for three years (prior to the act passing); held a qualification in massage or was able to pass an examination set by the Board ("Masseurs Registration Act," 1920). Most of the practitioners registered under this act practised under supervision or referral from medical practitioners, and eventually the profession evolved into physiotherapy (Smith et al.).

The Physiotherapy Act (1949) established massage as a therapeutic modality, to be officially to be practised by physiotherapists only. In the following years this proscription was largely

ignored, as several CM professions, such as chiropractic, osteopathy and naturopathy, along with massage practitioners, practised massage with little legal consequence (Norris, 2001).

Naturopaths have practised therapeutic massage since the inception of naturopathy as a distinct therapy. Massage as a part of health spas wherein many of the practices of naturopathy have their origin. As massage was prominent in Kneipp treatments in Austria, so too was it intrinsic to early naturopathic practices. This was no different in New Zealand, with the practice of massage being incorporated into naturopathy in the late 1940s (Middlestead, 2000).

It was not until the 1980s that therapeutic massage emerged as a separate profession in New Zealand. The New Zealand Association of Massage Therapists was formed in the 1980s and began lobbying parliament for massage to become a statutorily regulated health modality in New Zealand. The new association argued that the only recognition of massage in New Zealand legislation was the *Massage Parlours Act* ("Massage Parlours Act," 1978), which licensed massage outlets that primarily provided prostitution services, demeaning the reputation of therapists providing genuine massage services (Massage New Zealand, 2014). Whilst the *Massage Parlours* Act has not been repealed, massage therapists are no longer required to gain a licence under the act (Donna Smith et al., 2012). However, the *Physiotherapy Act* was repealed in 2004, as the Health Practitioners Competence Assurance Act set the legal provisions for physiotherapy as a registered profession in New Zealand (Nicholls, 2008). The passing of the Health Practitioners Competency Assurance Act paved the way for massage therapists to legally practice, albeit unregulated.

3.1.4.3 Naturopathy: the rebirth of nature cure

The first known naturopath in New Zealand, Ulric Williams (1890-1971), began his medical career as a conventional GP. His story illustrates that the drive to eliminate ‘quackery’,

although largely unsuccessful in the early part of the twentieth century, was still predominant in the 1930s. Ulric William's biographer Brenda Sampson (2003) has documented his transition from conventional medicine into naturopathy using naturopathic and other CM modalities to treat patients. Williams became interested in natural medicine from hearing the story of a woman whose daughter was cured of tuberculosis through a raw food diet. He slowly began incorporating nature cures, mainly nutritional therapy, into his practice. This soon drew the unwanted attention of the conventional medical establishment (at that time the New Zealand Council of the British Medical Association) and he was summoned to appear before the council. His being 'struck off' the medical register was only thwarted by political intervention. Just before he was to appear before the medical council, he received an honorary membership of the American Naturopathic Association, which aided his cause, and he was not removed from the medical practitioner register (Sampson). Williams continued to practice, with many successful documented cases of patients' recovery (through naturopathic methods) are documented in his book, Health and Healing in the New Age (Williams, 1949).

3.1.4.4 Osteopathy introduced alongside naturopathy

Osteopathy began in New Zealand in the 1930s (Pollock, 2018c; Skinner, 1988). The New Zealand Association of Naturopaths and Osteopaths was established in the early 1940s (Middlestead, 2000), with the combination of these two modalities being modelled on the organisational structure in the United Kingdom (British College of Osteopathic Medicine, 2020). A prominent early leader in New Zealand Association of Naturopaths and Osteopaths was David Duggan who knew, and was inspired by, Dr Ulric Williams. Another early leader was Errol Cheal, who had worked in Geneva with the World Health Organisation (World Health Organisation) Director of Traditional Medicine (Middlestead).

The New Zealand Association of Naturopaths and Osteopaths established the first college of naturopathy, the South Pacific College of Natural Therapeutics (later named the South Pacific College of Natural Medicine) in Auckland in the 1970s (South Pacific College of Natural Medicine, 2018). Osteopathy has since separated itself from naturopathy and is statutorily regulated under the HPCA (The Osteopathic Council of New Zealand, 2020).

3.2 Complementary medicine in New Zealand – recent developments

3.2.1 Naturopathy and herbal medicine in recent times and current status

After osteopathy split from naturopathy in New Zealand in 1981, the New Zealand Association of Naturopaths and Osteopaths changed its name to the South Pacific Association of Natural Therapeutists, which was later altered slightly to the South Pacific Association of Natural Therapists (Middlestead, 2000)[41]. The South Pacific Association of Natural Therapeutists was at the forefront of establishing a practitioner accreditation board that was inclusive of several modalities in New Zealand including: naturopathy, homeopathy, osteopathy (who's involvement was short-lived as they were seeking statutory regulation) and herbal medicine. Massage therapy was invited to participate but declined. This accreditation Board since changed its name to the Natural Health Council of New Zealand (The Wellness Directory.co.nz., 2020), (later the Council was disestablished). The New Zealand Charter of Health Practitioners (the Charter), a rival organisation to the Natural Health Council, was also set up in the mid-1980s (Ministerial Advisory Committee on Complementary and Alternative Health, 2001). This organisation has since changed its name to Natural Health Practitioners of New Zealand (2020). The South Pacific Association of Natural Therapists changed its name in the early 2000s to Naturopaths of New Zealand.

[41] Maria Middlestead compiled a history of the association and naturopathy in New Zealand, based on minutes and records dating back to the 1940s, that she has access to, being a long-serving secretary of the South Pacific Association of Natural Therapists. This was presented the association's AGM in 2000 but has not been published.

In the 1980s a new naturopathic association was set up in New Zealand. The New Zealand Society of Naturopaths functioned until 2017 when it merged with Naturopaths of New Zealand into a new association that also incorporated medical herbalists to be called the Naturopaths and Medical Herbalists of New Zealand (2020b). This new organisation is the major registration (voluntary) body for naturopaths in New Zealand. There were 252 practitioner members of the Naturopaths and Medical Herbalists of New Zealand at the start of 2021, of which 248 were women (Naturopaths & Medical Herbalists of New Zealand Incorporated, 2021)

3.2.2 Homeopathy re-emerges

Whilst homeopathy flourished in 19th century New Zealand, the 20th century has seen a decline in numbers until relatively recently (New Zealand Council of Homeopaths, 2015). Homeopathic practitioners did not form a professional body until 1951, when Alfred Grove, an Auckland homeopath, founded the New Zealand Homeopathic Society. This was an amalgamation of homeopaths and supporters of homeopathy and is still in existence today, although it is no longer the professional body representing homeopaths, but rather a "*charitable organisation dedicated to raising awareness of and supporting the growth of homeopathy in New Zealand"* (New Zealand Homeopathic Society, 2020)

The New Zealand Council of Homeopaths (2015) is the sole professional body representing homeopaths in New Zealand. It maintains a voluntary register of 147 homeopaths (137 female), who have a level 6 or 7 qualification (under the New Zealand Qualifications Authority criteria). The Council was founded in 1999 but, despite the advice of the MACCAH committee (Koopman-Boyden et al., 2004), homeopathy still has no statutory regulatory status in New Zealand.

3.2.3 Massage therapy unites

The New Zealand Association of Massage Therapists set up the first voluntary register of massage therapists in New Zealand and has since joined with a massage organisation (formed later than the New Zealand Association of Massage Therapists) – the Massage Institute of New Zealand, to become *Massage New Zealand* a registered incorporated society (Massage New Zealand, 2014, 2020a). This organisation is the sole professional body representing massage therapists in New Zealand. A research institute for massage therapy has been established in Invercargill, in the South Island of New Zealand (Southern Institute of Technology, 2021)

3.3 Regulatory Status of complementary medicine in New Zealand

Only two CM modalities: osteopathy, under the Osteopathic Council of New Zealand (2019) and chiropractic, under the New Zealand Chiropractic Board (2019), have statutory registration in New Zealand. All other CM modalities are either unregulated or under voluntary regulation schemes administrated by the various CM organisations (Massage New Zealand, 2016; Natural Health Practitioners of New Zealand, 2020; Naturopaths and Medical Herbalists of New Zealand, 2020b; New Zealand Association of Medical Herbalists, 2020; New Zealand Council of Homeopaths, 2015). Whilst acceptance from the public has increased, official recognition in the form of statutory regulation has not kept pace. However, some government recognition for CM has been given, in that the New Zealand Ministry of Health did appoint a Chief Advisor Integrative Care (Ministry of Health: Manatu Hauora, 2014). Unfortunately, the position has now been disestablished although an exact date for this disestablishment is not available on the Ministry of Health's website.

3.4 Investigations of complementary medicine in New Zealand

The first systematic investigation of CM was published in 1987 as a report to the Health Services Research and Development Unit, New Zealand Department of Health. This report

estimated provision and use of CM in New Zealand through a survey conducted in one region of New Zealand, listings in the telephone directory Yellow Pages; association membership lists, retail lists of practitioners, trainee practitioner numbers and surveys of specific CM groups (Leibrich et al., 1987).

Two early papers from the New Zealand Medical Journal report on general practitioners (GPs) attitudes and relationships to CM. Findings of a survey of New Zealand GPs (Wellington and Hutt districts) who were either practising CM, wishing to practise CM or referring patients to CM (n=173) published in 1988 (Hadley, 1988) showed that a considerable number of GPs were either trained in, or training in, CM (n=37). Modalities the GPs were trained in included: hypnosis (19%); acupuncture (32%); osteopathy (5%); chiropractic (8%); naturopathy (3%); homeopathy (11%); spiritual healing (11%) and other therapies (11%). Several were also practising CM without training (n=21). The survey also questioned the GPs on referrals to CM (n=166). Of the GPs referring to CM, 135 referred to medical practitioners (who used CM) and 132 referred to CM practitioners who were not medical practitioners. The most common referrals were to acupuncture and chiropractic (Hadley).

Marshall, et. al. (1990) conducted a survey of Auckland GPs (n=249) in 1980 and found that 30% practised some form of CM. Sixty-nine percent referred to some form of CM, with 33% referring only to medically qualified practitioners practising CM. The GPs rated the usefulness of CM modalities on a scale of 0-5, with the most highly rated modalities (from the GPs who did not practise any form of CM) being: acupuncture (3.33); massage (2.83); hypnotherapy (2.33) and herbal therapy (1.49). For those GPs who did practise a form of CM the most rated modalities of CM were: acupuncture (4.10); massage (3.37); hypnotherapy (3.14); homeopathy (2.67) and herbal therapy (2.07) (Marshall et al.).

Subsequent investigations have primarily focused on the public's use of CM as a form of health care; attitudes and perceptions of conventional care practitioners towards CM and practices in relation to this; attitudes and perceptions of the New Zealand regulatory framework, with only a limited focus on CM practitioners themselves.

3.4.1 The National Health Survey includes complementary medicine for the first time

The 2002/2003 New Zealand Ministry of Health National Health Survey found that 23.4% of New Zealand adults aged 15 years and older used CM services in the previous 12-month period. The most often cited reasons for CM use by participants (n=12,529 people) were that the respondents: had a condition that they perceived other health providers could not treat (53%); were referred by friends and family (29.2%); required specialist services (12.5%); had a referral from a G.P. (12%) (Ministry of Health, 2004).

For 33.4% of participants the G.P. had seen the condition before the patients began using CM services (Ministry of Health).

The New Zealand Ministry of Health New Zealand Health Survey 2006/2007 found that 1 in 5 adults accessed a CM health care worker in the previous 12 months. Women (22.3% of all respondents) were significantly more likely to use CM compared with men (14.1% of all respondents) (Ministry of Health, 2008).

Subsequent New Zealand national health surveys have not included questions on CM use (Pollock, 2018b). A search of Ministry of Health website did not find an explanation for this omission. This is despite the statement from the Ministry of Health:

> "*Priority was given to questions required to produce key indicators or outputs and to monitor time trends of importance to the Ministry of Health. Where results on an indicator or output were included in A Portrait of Health: Key results of the 2006/07 New Zealand*

Health Survey (Ministry of Health 2008), it was considered to be a good signal of importance." (Ministry of Health - Manatu Hauora, 2012)

3.5 The Ministerial Advisory Group on Complementary and Alternative Health: a new horizon or a mirage

In July 2001, the New Zealand Minister of Health established the Ministerial Advisory Committee on Complementary and Alternative Health (MACCAH). This committee's brief was to: "provide information and advice to the Minister on complementary and alternative health care; provide advice on the need, or otherwise, to regulate complementary and alternative health care practitioners in order to protect consumers who use complementary and alternative health care; provide advice on consumer information needs and, in particular, advice on the benefits, risks and costs of complementary and alternative therapies; review overseas evidence-based research, identify priorities for the development of New Zealand evidence-based research on the safety and efficacy of specific complementary and alternative therapies and support the development of guidelines; provide advice on whether, and how, specified complementary and alternative health practitioners should be integrated into the mainstream system; provide advice on how complementary and alternative health care can improve outcomes in the priority areas signalled in the New Zealand Health Strategy.

The committee developed its advice within the holistic context of the World Health Organisation's 1946 definition of health as "*state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" (World Health Organisation, 2019d), the Māori concept of health, which includes spiritual, physical, environmental and social health indicators (Durie, 1985), and consistency with the New Zealand Health Strategy[42] (Ministry of Health, 2000). In 2004, the MACCAH group produced a report that

42 See chapter 4, section 4.2.2.6, for a list of the objectives of the New Zealand Health Strategy (2000)

set out clear recommendations in the following areas related to CM practice as well as users in New Zealand (Koopman-Boyden et al., 2004).

3.5.1 Ministerial Advisory Committee recommendations

The report recommendations were made under the following categories: *regulation of CM practitioners; consumer information requirements; evidence and research for CM therapies and products; integration of CM and conventional health care; and alignment of CM with the New Zealand Health Strategy*

3.5.1.1 Regulation of practitioners

The MACCAH committee recommended that *"an increased level of regulation of CAM practitioners is needed to effectively protect New Zealand consumers from the risks involved with CM practice more information is needed about existing forms of regulation".* (Koopman-Boyden et al., 2004)

3.5.1.2 Evidence for the effectiveness of CM modalities

The MACCAH committee was charged with reviewing international "*evidence-based research*" and identifying priorities for New Zealand research development in this area, especially the safety and efficacy of specific CM therapies, alongside of supporting the development of evidence-based guidelines (such as those already in place for conventional medical care).

The statement that the MAACAH committee made about research into CM in New Zealand, is reproduced below.

> *"Existing research in New Zealand: Some research is being undertaken in CM training institutions by practitioners and by professional bodies. Unfortunately, there is no systematic way of accessing these research efforts and assessing their*

contribution to the areas of CM safety/efficacy. This is in contrast to university requirements to lodge post-graduate research in university libraries. To maximise the gains from existing New Zealand based research and to continue to develop the level of research training, MACCAH considers that a facility for recording past and current research projects would be useful. Again, research should meet agreed methodological requirements."[43]

3.5.1.3 Integrating CM with the conventional health care system in New Zealand

In making their recommendations the MACCAH committee considered the following: the ways in which such integration could occur; what approaches to integration have already occurred internationally; what integration between CM and conventional care is already occurring in New Zealand and what is the nature of such integration, and the criteria under which there might be future integration of CM with conventional care in New Zealand.

3.5.1.4 Complementary Medicine's contribution to the New Zealand Health Strategy

The MACCAH committee identified areas where CM could play a role in realising the goals within the New Zealand Health Strategy (Ministry of Health, 2000).

3.6 Complementary medicine and conventional practitioners' and users' perceptions of factors associated with the provision of complementary health care in New Zealand: a critical literature review

This section reviews published data related to: CM users' perceptions and use of CM, conventional healthcare practitioner practitioners' attitudes to integration with CM; referrals between conventional healthcare practitioner and CM practitioners; and CM users and CHC practitioners views of regulation of CM in New Zealand. The literature related to these

[43] This recommendation has not had the effect of inspiring a significant amount of research in CM in the twenty years that followed the release of the report, but was, in part, the inspiration for the development and conducting of this research project.

aspects of CM practitioner use and CM integration with conventional healthcare practitioners, has not been comprehensively reviewed to date.

3.6.1 Methods

3.6.1.1 Selection of papers

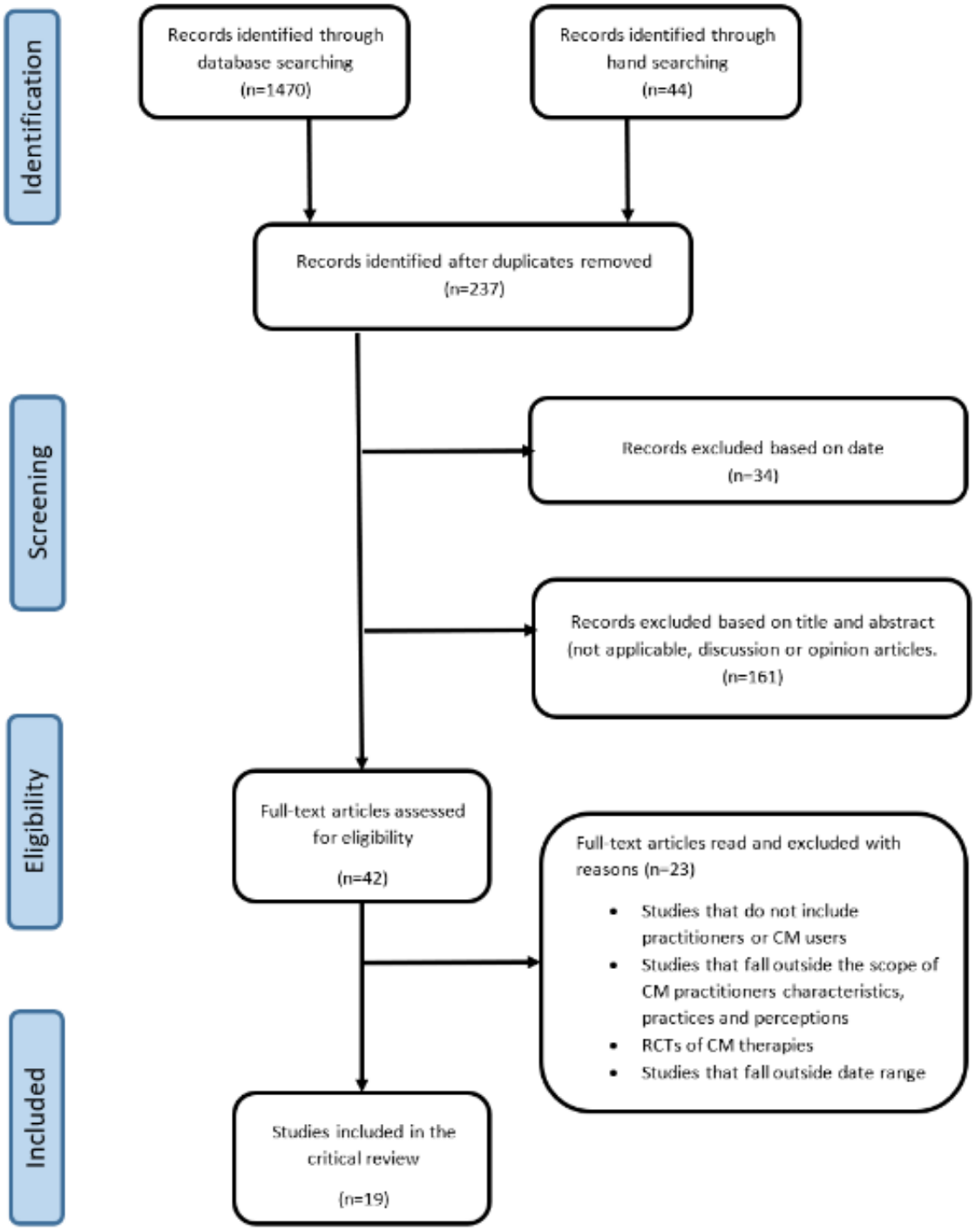
A search of research articles published between 1999 and 2020 was conducted on MEDLINE, CINAHL, AMED databases, along with a manual online search(using Google scholar and google web search), using the following key words (in several combinations to broaden the scope of the search): *New Zealand; complementary medicine; alternative medicine; integrative medicine; naturopathy; herbal medicine; massage; massage therapy; homeopathy; referral; attitudes to evidence; research; integration and integrative practice; practice characteristics; registration and regulation*. The search was confined to papers in English and an initial screening by title and abstract conducted.

Search results were imported into Endnote X8 software and duplicates removed. If the abstract failed to provide enough information to determine suitability, a more detailed screening was undertaken to determine suitability of papers and reports for this review. Those papers that report new empirical findings from observational studies, utilising systematic research design and data analysis were included. Those papers identified as commentaries/editorials, opinion pieces or correspondence were excluded. A summary of the included papers with an analysis of emergent themes arising from the information is presented in table 3.1.

The initial search uncovered 1513 papers. After duplicates were filtered 236 papers remained. A date range (2000 – 2020) was then applied to the found set of papers and all papers outside that range were excluded as not having enough current relevance. After detailed screening of abstracts and full text, 19 papers reporting on empirical studies were selected for inclusion

(Fig 3.3). The PRISMA flow chart format for systematic reviews (Moher et al., 2009) has been used to depict paper selection (Fig. 3.2).

Fig. 3.3 – PRISMA flow diagram for literature searching



3.6.1.2 Critical appraisal of papers

Utilising a critical appraisal instrument (Adams, Barbery, et al., 2013), the selected papers were evaluated prior to inclusion (Table 3.3). This appraisal instrument was used to examine the articles using a scoring system that measures across three dimensions: study methodology, the demographics of participants and how CM is defined in the article. One point was allocated to each of the 10 areas within the dimensions. In the appraisal instrument, methodology is appraised using three criteria: sample representation and methodology of the selected papers (with a sample size of greater than 500 being the gauge by which a point is allocated or not); a response rate of greater than 75% and low recall bias. The instrument also appraises participant characteristics using age, gender, residence/location, socio-economic status and health status. The tenth criteria in the instrument appraises whether the reporting data identifies the specificity of the CM modalities included in the study. Each of these aspects was allocated 1 point if the minimum criterion for the aspect is met. The maximum potential score is 10. This tool was previously developed for use in CM reviews and been applied in review papers related to CM use (Adams et al., 2009; Reid et al., 2016).

After the papers were appraised using the above identified instrument, each included article was then thematically grouped, a process involving extensive reading and re-reading of the papers to identify themes that relate to this study (Table 3.1). The themes that were identified as common were topics or characteristics that were consistently evident over several papers. The identification of these themes allowed for articles to be placed in relevant categories and the reported findings compared and contrasted in the categorised articles.

Table 3.1: Analysis of papers selected for review

Year	Author(s)	Research Foci	CM modality	Method	Sample Characteristics	Themes				
						I	II	III	IV	V
2000	Milne, B. J., Waldie, K. E., & Poulton, R[38]	To profile 26-year-old New Zealand users of unconventional practitioners.	Massage therapist Chiropractor Osteopath Homeopath Acupuncturist Naturopath	Extraction of data from longitudinal health study (The Dunedin Study)	996 of 26-year-old participants, born in Dunedin, New Zealand between 1 April 1972 and 31 March 1973		✓			
2003	Chrystal, K., Allan, S., Forgeson, G., & Isaacs, R.[47]	To study the prevalence and patterns of CM use in cancer patients	A spectrum of modalities with Naturopathy & herbal medicine, massage therapy and homeopathy included	Self-administered questionnaire (survey)	N=203 patients in a regional cancer centre		✓			
2003	Taylor M[30]	To explore patients and general practitioners' attitudes to complementary & alternative medicine in Wanganui	Chiropractic Acupuncture Aromatherapy Rongoa Maori Hypnosis	Questionnaires in GPs clinics (patients) and postal survey (GPs)	N=104 (patients) N=25 (GPs)			✓		
2005	Trevena J, Reeder A.[48]	To study perceptions regarding CM treatments for cancer among adult New Zealanders	Alternative medical systems Mind/body/spirit interventions Biological-based therapies Manipulative and body-based therapies Energy therapies	national telephone survey	N=438		✓			
2006	Poynton L, Dowell A, Dew K, Egan T.[27]	understand of GPs views and use of CM medicine	A spectrum of modalities with Naturopathy & herbal medicine, massage therapy and homeopathy included	nationwide cross-sectional postal questionnaire	N=300 New Zealand GPs			✓	✓	

Year	Author(s)	Research Foci	CM modality	Method	Sample Characteristics	Themes					
						I	II	III	IV	V	VI
2006	Nicholson T.[15]	To establish the prevalence of use of CM	Generic CM therapies	Cross-sectional survey	N=1043 convenience sample of patients and relatives presenting to a large tertiary ED (Waikato Hospital, Hamilton)		✓				
2007	Wilson K, Dowson C, Mangin D..	Determine differences in the use of CM by paediatric outpatients and those attending GP practices & to identify indicators of CM use in these two populations	General	Questionnaire administered to patients in a clinical or hospital setting	N=100 paediatric patients in Christchurch GP clinics and a paediatric outpatient clinic		✓				
2008	Evans, A., Duncan, B., McHugh, P., Shaw, J., & Wilson, C.[16]	To assess the use and attitudes towards traditional, CM medicine and therapies by inpatients of a provincial hospital.	General	Face to face interviews using questionnaire (over 4 weeks)	N=92 Gisbourne Hospital in-patients		✓			✓	
2008	Chan HOL, Whitehead D.[1]	explore the factors which underpin the healthcare consumers' decision-making to use CM in the primary setting	Generic	Case studies (qualitative)with in-depth, semi-structured interviews	N=7: convenience-sampled participants		✓				
2009	Harding D.M.[36]	to investigate how midwives in primary midwifery care practice in two countries use CM medicine	• Wide range	Postal survey (quantitative & qualitative questions)	N=171 New Zealand Independent Midwives			✓	✓		
2009	Holt S, Gilbey A.[49]	to explore lay people's understanding of homeopathy and the range of conditions for which it has been used in a New Zealand setting	Homeopathy	Brief self-reporting questionnaires	N=124 patients in three GP surgeries in the North Island of New Zealand		✓				

Year	Author(s)	Research Foci	CM modality	Method	Sample Characteristics	Themes					
						I	II	III	IV	V	VI
2009	Bennett JA, Cameron LD, Whitehead LC, Porter D.[50]	Describe the differences between younger and older cancer survivors in seeking cancer information, using CM services, and using conventional support services	A spectrum of modalities with Naturopathy & herbal medicine, massage therapy and homeopathy included	Mail survey	N=836 Cancer survivors were recruited using community-based methods.		✓				
2010	Pledger MJ, Cumming J, Burnette M.[29]	CM users preferences and utilisation	A spectrum of modalities with Naturopathy & herbal medicine, massage therapy and homeopathy included	Analysis of data on CM usage from national health survey	N= 12,529 from general population of New Zealand		✓				
2011	Smith JM, Sullivan SJ, Baxter GD.[32]	Describe the practice patterns of massage therapists	Massage Therapy	Mail questionnaire Convenience sample (Practitioner organisation) Descriptive analysis	N=92 Registered Massage therapists	✓			✓		✓
2011	Bocock, C., Reeder, A. I., Perez, D., & Trevena, J.[34]	New Zealand Doctors views on integrating CM into CHC	No specific modality	Survey	N=235 Doctors in Otago region			✓			
2011	Upsdell M, Jaye C.[31]	reasons why some GPs choose to engage with CM, how these reflect their aims of health care, the difficulties they encounter and how these are negotiated within the consultation.	Generic	Qualitative questionnaire	N= 12 mainstream GPs from the greater Auckland area			✓			
2013	Leach, M. J.[13]	Study of CM workforce in terms of supply and Composition.	Wide range of CMs	Census analysis Descriptive analysis	N= 3495 CM practitioners from 2006 Census	✓					

Year	Author(s)	Research Foci	CM modality	Method	Sample Characteristics	Themes					
						I	II	III	IV	V	VI
2015	Stapleton P, Chatwin H, Crebbin S, Smith D, Boucher E, Scott S.[26]	investigate the utilization pattern of CM among registered psychologists, and level of training in delivering a CM service	A spectrum of modalities with Naturopathy & herbal medicine, massage therapy and homeopathy included	anonymous online survey	N=193 registered psychologists from Australia, the United States, the United Kingdom, and New Zealand			✓	✓		
2018	Barnes J, Butler R.	To examine community pharmacists' perspectives on CMs regulation in New Zealand	Generic	Qualitative, in-depth, semi-structured interviews	N=27					✓	

Table 3.1 - Themes

I - CM Practitioner Characteristics
II- CM user perception of the value of CM and CM practitioners
III - Conventional care attitudes to CM& integration
IV Referrals between CM & CC
V Legal Status of CM
VI CM practitioners' attitudes to research and evidence-based practice

Table 3.2 Critical appraisal tool analysis results - (Adams, Barbery, et al., 2013)

Authors/year	Type of participant/ study	Methodology				Participant characteristics					CM definition	Score/ 10
		Representative sampling method	Sample size >500	Response rate >75 %	Low recall bias	Age	Gender	Residence location	Socioeconomic status	Health status		
Milne, Waldie & Poulton, 2000	Patient survey	1	1	1		1	1	1	1	1	1	9
Chrystal, Allan, Forgeson et al., 2003	Patient/ survey				1	1	1	1	1	1	1	7
Taylor, 2003	Patient and GP/ survey	1		1	1			1			1	5
Lawler S. & Cameron L., 2004	Patients and GPs/ Survey	1				1	1	1			1	5
Trevena & Reeder, 2005	Patient/ survey	1			1	1	1				1	5
Poynton, Dowell, Dew et al., 2006	GP/ survey	1			1						1	3
Nicholson, 2006	Patient/ Survey	1	1	1		1	1				1	6
Evans, Duncan, McHugh et al., 2008	Patient/ survey	1			1	1	1		1	1	1	7
Wilson K, Dowson C, Mangin D.	Quantitative survey			1	1	1	1	1		1	1	7
Chan & Whitehead, 2008	Patient/ multiple case study	N/A	N/A	N/A	1	1	1		1			4
Harding & Foureur, 2009	Midwife/ Survey quant	1					N/A	1	N/A	N/A	1	3
Holt & Gilbey, 2009	Patient/ Survey				1	1	1	1			1	5
Bennett, Cameron, Whitehead et al., 2009	Patient' survey	1	1	1	1	1	1		1	1	1	9
Pledger, Cumming & Burnette, 2010	Patient/ survey	1	1	1	1	1	1	1	1	1	1	10

Table 3.2 Critical appraisal tool analysis results (2)

Authors/year	Type of participant/ study	Methodology				Participant characteristics					CM definition	Score/ 10
		Representative sampling method	Sample size >500	Response rate >75 %	Low recall bias	Age	Gender	Residence location	Socioeconomic status	Health status		
Smith, Sullivan & Baxter, 2011	Practitioner/ survey	1			1	1	1	1	N/A	N/A	N/A	5
Bocock, Reeder, Perez et al., 2011	Practitioner survey	1			1	1	1	1	N/A	N/A		5
Leach, 2013	Practitioner/ analysis of census	1	1	1	N/A	1	1	1	1	N/A	1	8
Stapleton, Chatwin, Crebbin et al., 2015	Practitioner survey	1			1	1	1	1		N/A	1	6

Table 3.3 Qualitative assessment for two papers using the Critical Appraisal Skills Qualitative Checklist (Gray et al., 2021)

Paper Author	Type of paper	1.Was there a clear statement of the aims of the research? Y/N – can't tell	2.Is a qualitative methodology appropriate? Y/N – can't tell	3.Was the research design appropriate to address the aims of the research? Y/N – can't tell	4. Was the recruitment strategy appropriate to the aims of the research? Y/N – can't tell	5. Was the data collected in a way that addressed the research issue? Y/N – can't tell	6. Has the relationship between researcher and participants been adequately considered? Y/N – can't tell	7. Have ethical issues been taken into consideration? Y/N – can't tell	8. Was the data analysis sufficiently rigorous? Y/N – can't tell	9. Is there a clear statement of findings? Y/N – can't tell	10. How valuable is the research? Y/N – can't tell	Score
(Upsdell & Jaye, 2011)	Practitioner Qual study	Y	Y	Y	Y	Y	Can't tell	Y	Can't tell	Y	Very valuable - indicates the importance of this thesis	8
Barnes J, Butler R., 2018	Qual interviews Pharmacists	Y	Y	Y	Can't tell	Can't tell	Can't tell	Can't tell	Can't tell	Y	Useful, particularly for regulation issue in this thesis	5

3.6.2 Results

3.6.2.1 Nature of the included papers

Twenty-one papers (over a nineteen-year period) were selected (Table 1). These papers report on data from studies involving conventional and CM practitioners as well as CM users. There was minimal homogeneity regarding the scope and/or method across the studies reported.

3.6.2.2 Emergent themes from the review

The key findings of the review identified the following themes: CM practitioner demographics and characteristics; CM users' perceptions of the value of CM and CM practitioners; conventional healthcare practitioner practitioners' attitudes to CM & integration; referrals between CM & conventional care; and CHC and CM practitioners' perceptions of regulation of CM.

3.6.2.3 CM practitioner demographics and characteristics

Only two New Zealand CM practitioner studies were found in the literature search. These two papers are workforce studies of CM practitioners. One of these studies reports on a survey of massage therapists (Smith et al., 2011b). The other paper is an analysis of 2006 census information relating to CM practitioners, including naturopaths/medical herbalists, massage therapists and homeopaths (Leach, 2013). For the purposes of this review the analysis of the 2006 New Zealand census is compared to data from the two following national New Zealand censuses (2013 and 2018).

Table 3.4 contains workforce data from three New Zealand census years: 2006 (Leach, 2013), 2013 (Statistics, 2015) and 2018 (Statistics, 2019). Whilst the total CM workforce increased by 24% between 2006 and 2013 and 32% between 2013 and 2018, the naturopathic workforce increased by 13% (2006-2013) and 21% (2013-2018), the massage workforce increased by 33% and 38% respectively, and the homeopathic workforce decreased by 24%

and 4% respectively. It is important to note that the New Zealand census data does not include information on medical herbalists.

Table 3.4 Census data (2006, 2013, 2018) showing CM workforce population for naturopaths, massage therapists and homeopaths

Data Source	Naturopaths Sample size (%age of total CM workforce)	Massage Therapists Sample size (%age of total CM workforce)	Homeopaths Sample size (%age of total CM workforce)	Total CM workforce
2006 Census	435 (12)	1272(36)	102 (3)	3495
2013 census	492(11)	1698 (39)	78 (2)	4329
2018 census	597(10)	2349 (41)	75 (1)	5703

In a 2011study of massage therapists, Smith, Sullivan and Baxter (2011b) identified 250 registered massage therapists in New Zealand of which 83% were female. The massage therapists were primarily New Zealand European (75.8%) with an age range of 28-64 years (mean age 45.8 ± 8.7 [SD] years), with qualifications ranging from certificates to baccalaureate degrees. (A diploma in massage was the most common qualification.) Fifty-seven percent of respondents self-reported practising full-time, with most (93.7%) were in their massage practice for over 40 weeks in a year.

3.6.2.4 CM users' perceptions of the value of CM and CM practitioners

Eight studies of CM users were included (6 utilising quantitative survey methodology and 2 using qualitative interview methodology). Reporting across several the quantitative studies shows that users of CM in New Zealand are: predominantly female (Bennett et al., 2009; Chrystal et al., 2003; Evans et al., 2008; Holt & Gilbey, 2009b; Milne et al., 2000; Nicholson, 2006; Pledger et al., 2010; Wilson et al., 2007); over 30 and under 60 (Chrystal et al., 2003; Evans et al., 2008; Nicholson, 2006; Pledger et al., 2010; Taylor, 2003) and more likely to have a higher income (Chrystal et al., 2003; Evans et al., 2008; Milne et al., 2000; Pledger et al., 2010; Wilson et al., 2007). Types of CM utilised are many (Bennett et al., 2009; Chrystal

et al., 2003; Evans et al., 2008; Milne et al., 2000; Wilson et al., 2007), covering a wide range of medical conditions (Evans et al., 2008; Milne et al., 2000; Pledger et al., 2010; Wilson et al., 2007). Three studies specifically focused on CM use for cancer (Bennett et al., 2009; Chrystal et al., 2003; Trevena & Reeder, 2005).

Many studies show CM users utilise CM alongside conventional care (Bennett et al., 2009; Chrystal et al., 2003; Evans et al., 2008; Holt & Gilbey, 2009b; Nicholson, 2006; Pledger et al., 2010; Trevena & Reeder, 2005), with three studies reporting CM users have limited discussion about CM treatment with their conventional care provider (Chrystal et al., 2003; Evans et al., 2008; Nicholson, 2006). Reasons for CM use varied, with patients: seeking to improve quality of life (Chan & Whitehead, 2008; Chrystal et al., 2003); take control over their own health (Bennett et al., 2009; Chrystal et al., 2003; Pledger et al., 2010); believing in the effectiveness of CM (Holt & Gilbey, 2009) and exploring of other choices in health care (Bennett et al., 2009; Evans et al., 2008). Some studies showed CM users believed CM was safe (Chrystal et al., 2003; Evans et al., 2008; Nicholson, 2006; Wilson et al., 2007), with effectiveness also being a factor in choosing CM treatment (Bennett et al., 2009; Chan & Whitehead, 2008; Holt & Gilbey, 2009b; Nicholson, 2006; Trevena & Reeder, 2005).

3.6.2.5 Conventional care practitioners' attitudes to CM, and integration of CM with conventional care, in New Zealand

Attitudes to CM by conventional practitioners in New Zealand range from the perception that CM has no benefit, with subsequent little or no engagement from conventional care practitioners with CM (Poynton et al., 2006; Stapleton et al., 2015; Upsdell & Jaye, 2011), to varying degrees of positivity about CM and subsequent engagement with CM (Bocock et al., 2011; Harding & Foureur, 2009; Poynton et al., 2006; Taylor, 2003).

A survey of patients and GPs was conducted at three healthcare centres in Whanganui New Zealand, with patients completing a questionnaire at the time of the visit (n=50). Alongside

the patient survey, there was also conducted a postal questionnaire of GPs (n=25). The questionnaire explored whether GPs inquired about the use of CM with patients as well as asking GPs to estimate use of CM among patients (Taylor, 2003). Eighty-four percent of GPs estimated CM use among patients to be less than 50%, whereas patients reported 67% use of CM. Ninety-six percent of GPs reported asking patients about use of CM and 86.2% of patients were able to discuss CM use with their GP. Seven GPs reported being in CM training with six practising some form of CM. GPs main concerns about the patients' use of CM were safety and regulation of CM (Taylor).

A 2006 national postal survey of GPs (n=300) reflected the findings in Whanganui, with 95% of GPs referring patients to CM, and 20% of GPs utilising some form of CM in their practice (Poynton et al., 2006). Whilst acupuncture and chiropractic were the CM therapies perceived as being most valuable by GPs, other therapies perceived of having benefit were herbal medicine (33%), homeopathy (26%) and naturopathy (28%). No information was collected for massage (Poynton et al.).

Registered psychologists from New Zealand (n=33), Australia (n=92), the United States (n=35) and the United Kingdom (n=23), were surveyed. The survey method was not identified. The survey found that female practitioners' acceptance of CM ($p<0.005$) and the level of all practitioners' training in CM ($p<0.005$) were positively associated with CM utilisation (integration into practice or referral to CM) by psychologists in the study. New Zealand psychologists were found to be less likely to refer to or recommend CM than their counterparts in the other countries The percentage of New Zealand psychologists who did refer to CM was still at 92%, with 80% reporting contacting a CM practitioner. (Stapleton et al., 2015).

A postal survey of doctors, both GPs and oncologists in the Otago province (n=235, 59% RR), focused on cancer treatment and integrative care (Bocock et al., 2011). Sixty percent of all respondents agreed with the statement that CM therapies should be integrated with conventional care. In response to a question about their own participation in integrative treatment, 71% agreed that they would participate in integrative care if patients were curable, with 86% agreeing that they would participate in integrative care if patients were incurable. Concerns about interacting with CM from the majority of respondents included: potential adverse effects (87%); cost of CM (84%); interference with conventional treatment from CM (89%) and the lack of scientific information (about CM) available (86%). Fifty-eight percent stated that they wished to be educated more on CM, with only 27% stating that they have sufficient knowledge of CM to advise patients (Bocock et al.).

A qualitative study of GPs conducted in the Auckland area (n=12) found that the 'paradigm gulf' between CM and conventional care was a main concern, along with standards of practice and professionalism in CM practitioners (Dew et al., 2008). Some practitioners were willing to engage with patients about CM, with others feeling that they did not have enough knowledge of CM to raise the subject with patients. A belief in the value of patient-centred care (contrasted with a more diagnostic focus) positively affected the GPs' manner of engagement with patients about CM (Dew et al.).

Another qualitative study, utilising documentary analysis of patient-GP interactions, reported nil or reserved responses from GPs to patients' questions about CM therapies. The GPs reinforced patients' negative responses when asked about CM therapies, particularly in situations where CM therapists 'transgressed' into areas that the GP saw as their domain, such as medication regimes (Upsdell & Jaye, 2011).

3.6.2.6 Interactions (including referrals) between conventional care and CM

Several studies (quantitative and qualitative) have investigated referrals between conventional care and CM.

An analysis of the 2003/2004 New Zealand Health Survey data files (n=12,529), shows that 12.0% (95% CI 10.4–13.8) of CM users were referred to a CM practitioner by a GP (Pledger et al., 2010).

The results from a quantitative survey of GPs (n=300) (Poynton et al., 2006) showed that the number of GPs practising CM had declined over the fifteen years previous (47% to 20.3%), but the number of GPs referring to CM had increased (57% to 94.7%). The survey also found that acupuncture (45%) and chiropractic (43%) were the CM therapies most identified as being most easily integrated with conventional medicine and being perceived as having the most benefit (acupuncture 87%, chiropractic 79%). Sixty-seven percent of the GPs felt CM should be included in formal conventional medical training (Poynton et al.).

In 2011, a qualitative study of GPs (Upsdell & Jaye, 2011) investigated the reasons why some GPs engage with CM, how the GPs' health care aims are reflected in this engagement, difficulties and barriers they encountered, and how they conducted negotiations within the consultation. The findings showed that positive and negative influences on GPs referring patients to CM in New Zealand were: no response to conventional treatment; the patient's preference; GPs' belief in efficacy of CM; GPs' belief that there are less adverse effects in CM; the conception of the GPs of synergistic benefits of CM and conventional care; the GPs' observation that the condition was non-organic or psychological therefore suited to CM care and the GPs belief in the limitations of scientific world-view (Upsdell & Jaye).

One of the most comprehensive studies of GPs' attitudes to use of CM by patients was a 2011 New Zealand wide survey of GPs (n=235, a 59% response rate). This study examined the

relationship of demographic variables of the GPs to attitudes and interactions with CM (Bocock et al., 2011). The study also investigated the likelihood of GPs recommendations to patients about CM and referrals of patients to CM, finding that 58% of doctors were interested to learn more about CM, but only 14% reported that their training prepared them for integration with CM. Twenty seven percent reported having enough knowledge to advise patients on use of CM. A multiple regression analysis using odds ratios (OR) was applied to the data. The findings resulting from this analysis were that female GPs were more likely to ask patients about CM use (2.9 OR; 1.6-5.3 CI), and more likely to recommend CM to patients (2.8OR; 1.4-5.5 CI). Medical training in New Zealand was a positive influence on GPs asking patients about CM (1.0 OR; 0.6 – 1.8 CI) and GPs recommending CM (1.3OR; 0.7-2.4CI). Most (60%) of the GPs agreed with the statement that "CM therapies should be integrated into the treatment regime to provide the best patient care", with 53% endorsing CM for "adjunctive therapy", 17% for "symptom control", 9% for palliation and 1% for CM being "the sole agent of cure" (Bocock et al.).

Referral to CM from GPs has also been investigated in an earlier nation-wide, cross sectional survey of GPs (n=300, response rate 60%), finding that referral from GPs to CM is widespread (94.7%) and that the referrals were mostly at the request of the patient (86.3%), with the GPs' general perception of CM benefit being low ($p<0.005$) (Poynton et al., 2006). In provincial New Zealand, a 2003 survey of 3 GP practices found that 15.3% of patients report their GP referring them to CM (Taylor, 2003).

Midwives in New Zealand have shown a greater acceptance of CM than GPs (New Zealand College of Midwives, 2019). A two country (New Zealand and Canada) survey of midwives use of CM reports that 95.2% of New Zealand midwives referred to a CM practitioner, with homeopaths (62%), acupuncturists (55%), osteopaths (40%), naturopaths (24%) and

herbalists (23%) the most prominent CM modalities being referred to. This study did not investigate referrals to midwives from CM practitioners (Harding & Foureur, 2009).

In relation to CM practitioner-initiated interaction with conventional healthcare practitioners, there has been limited research conducted into CM practitioner practices and perceptions in New Zealand. Smith, Sullivan and Baxter (2011b) conducted a survey of 66 massage therapists (78% RR), using a 36-item questionnaire, collecting information on therapists' characteristics, as well as identifying the types of practitioners massage therapists refer to. Of the conventional practitioners referred to by massage therapists, GPs were the CHC practitioners most commonly referred to (69.7%), followed by physiotherapists (60.1%), podiatrists (36.4%), sports medicine specialists (27.2%) and psychologists (7.6%). No information was reported on numbers or methods of referrals (Smith et al.).

3.6.2.7 The regulatory status of CM in New Zealand

The history of CM in New Zealand (with the push to exclude the 'irregulars' and the legislation attempting to suppress CM practices) offers some explanation as to why there is only a limited regulatory framework for CM practice in New Zealand. However, there have been calls from both patients and CHC practitioners for regulation of CM modalities (Barnes & Grace, 2019; Evans et al., 2008; Mistry et al., 2010).

In a face-to-face survey with 51 patients in a provincial hospital in New Zealand 96% of GPs and 78% of patients stated that CM should be regulated (Evans et al., 2008). Lack of regulation has been cited by GPs as a common reason (78%) for lack of referral to CM in a national survey of GPs (Poynton et al., 2006).

New Zealand pharmacists participated in a qualitative study, which asked them their views on regulation of CM and CM practitioners. There was general agreement on the importance of

regulating of CM practitioners, with some divergence regarding statutory vs voluntary regulation (Barnes & Grace, 2019).

No data on attitudes to regulation from New Zealand CM practitioners has been found, other than the study that produced the core data for this thesis.

3.6.2.8 New Zealand CM practitioners' perceptions of and attitudes to research and evidence-based medicine

No data on New Zealand CM practitioners' attitudes and engagement in research has been found, other than the study that produced the core data for this thesis.

3.7 Conclusion

The pathway for CM to become integrated with conventional care requires careful consideration by both CM and conventional practitioner organisations, as well as educational institutions, registering authorities and Government departments. This literature review has outlined current knowledge of CHC and CM practices and perspectives around issues related to integration with conventional care in New Zealand. Many questions remain about the process of integration. Current information about the contributing areas of education, referral practices, attitudes to registration and integration in New Zealand is limited. Further systematic investigation of facilitators and barriers to integration of CM with conventional care is warranted. Future research should focus on the views and practices of CM practitioners and how they see their role in IM as well as potential mechanisms of referral and other areas of integration.

3.8 Chapter Summary: The journey of complementary medicine in New Zealand

Considering the traditional Māori medical practices and the CM practices that were prevalent among in the first settlers in New Zealand, it is well established that there has been a long and continuing tradition of CM use in New Zealand. The journey of CM in New Zealand has

been a turbulent and somewhat contradictory one, given the climate of suppression that developed in the 19th century, culminating in the *Tohunga Suppression Act* ("An act to suppress Tohungas," 1907; Malcolm, 1989) and the *Quackery Prevention Act* ("An Act to prevent the Practice of Quackery," 1908). These acts, although unsuccessful in achieving the aim of supressing CM practices and practitioners, did have the effect of diminishing the numbers of practitioners. However, CM emerged in the 1950s and its popularity and practitioner numbers grew from the 1970s until the current day, where there is a developing climate of recognition and acceptance. Although full integration of CM into mainstream health care has not been achieved, there is continually emerging evidence of conventional healthcare practitioner practitioners acknowledging that CM has a place in health care and frequently referring patients to CM practitioners.

Chapter 4. Methodology

This chapter provides an overview of the methodology utilised in the collection and analysis of data from the survey of complementary practitioners in New Zealand titled *Mapping the Natural Health Landscape* (MTNHL), the core data used for this thesis. This thesis is a quantitative investigation of characteristics and perspectives of CM practitioners in New Zealand, across a broad range of topics, pertaining to their perception of important issues with CM, and practices related to their professional lives. Chapter 4 outlines the processes undertaken to develop the study, the conception of the purpose and rationale, the survey design process, ethics application, sampling and recruitment of participants, data collection and data analysis. Data collection and data management processes utilised in the study are described in detail, along with salient questionnaire items that address the research questions (see section 1.2.3).

4.1 Study design

Health services research methodology was utilised to design the study, as the purpose was to investigate CM practitioners' practices and perceptions within the New Zealand healthcare environment (see Chapter 1 – section 1.1.2). The study design was framed to answer questions about CM practice in New Zealand using a quantitative data collection process (see chapter 1, section 1.2.2). A quantitative data collection was considered the best design to objectively map New Zealand CM practitioners' views and practices. The thesis also places importance on investigating statistically significant associations between aspects of CM practitioners' perspectives and practices in New Zealand. A survey design was chosen as this data collection method would best fit the requirements of the study.

The survey design aligned the project to the recommendations of the MACCAH committee (see chapter 3, section 3.5) that investigated CM in New Zealand some years prior to the

beginning of the project (Koopman-Boyden et al., 2004). These recommendations were to become the major guidance for the study development.

4.1.1 Survey research design

An established research method for social science research, surveys are useful for both collecting descriptive data and identifying correlations and associations between data variables. A large part of the usefulness of surveys in health services and outcomes research, is that they can indicate patterns of health provision, as well as attitudes and perceptions of both providers and users of health services (Polit & Beck, 2014).

4.1.2 The Mapping the Natural Health Landscape survey

4.1.2.1 Survey development

The survey was built around a preliminary set of domains, which were considered to be aligned with the afore-mentioned government committee recommendations, also taking into account the results of the New Zealand health surveys *(Ministry of Health, 2004, 2008)*. These domains were also refined and after deliberation and consultation with 4 practitioners (across naturopathy, herbal medicine, homeopathy and massage therapy) and 2 other researchers who were associated with Wellpark College of Natural Therapies (the educational institution of the author of this thesis) and the New Zealand College of Massage. It was decided to frame the investigation (questionnaire and analysis) into seven specific domains: practitioner demographic data; practice characteristics of CM practitioners; academic qualifications and education of CM practitioners; perceptions and experiences regarding the role of research and evidence-based practice in CM; perceptions and experiences regarding integration of CM with mainstream health care, including referral characteristics; perceptions regarding registration (statutory or voluntary) of CM practitioners and CM practitioners

current alignment to the goals of the New Zealand Health Strategy (Ministry of Health, 2000).

A general information release was then developed to inform the CM practitioners through their practitioner organisations about the intent of the survey (see appendix 2). This information release was conducted under the auspices of the New Zealand Colleges of Complementary Medicine Consortium. The consortium approved for it to be released under their name but, post this release, ceased to have any involvement in the research study. The release outlined the rationale for, and the steps that the team was taking, to develop and conduct the survey. The intention of the information release was two-fold: to gain support from the practitioners and their organisations, and to encourage the practitioners to participate in the study (as respondents to the questionnaire).

4.2 Survey research design

4.2.1 Selection of method of data collection

The question of on-line versus paper questionnaires was considered carefully. In considering the evidence to support either method, studies and articles containing expert opinion and commentary were reviewed. A selection of the findings from these reviewed studies follows.

A review of data from randomly selected published studies on response rates to surveys (postal compared to on-line) of health professionals, found no statistically significant difference in response rates between postal and electronic surveys ($p=0.51$), but concluded that response rates to postal surveys were low and probably declining. The mean response rate was 57.5% (95% CI:55.2% to 59.8%) with a median of 59% with the interquartile range (IQR) 42.2%-70.8%. There was also no significant difference between different categories of health professionals ($p=0.18$). However, the review found that reminders to potential participants are a positive influence on response rates, a finding that had importance to this

thesis survey in that the studies conducted in New Zealand, Australia, Canada and the United States tended to have lower response rates (Cook et al., 2009). In another study, electronic surveys of had a slightly higher response rates than email surveys (Kittleson & Brown, 2005).

In 2003, a study with paediatricians compared response rates from email, fax and postal surveys. Whilst the email response rates were less (47% compared to 55% for postal and 57% for fax) the authors concluded that emailing questionnaires was worth considering, especially since the most invalid responses, as well as delays in responding were from the postal mode of data collection (McMahon et al., 2003). Another 2003 paper compared response rates in online and postal data collection in marketing research and concluded that online questionnaires offered some advantages over postal questionnaires, particularly in accuracy of data and efficiency data collection (McDonald & Adam, 2003).

Whilst the aforementioned studies were useful in guiding the decision-making process for the research, online surveys were relatively novel in the early 21st century. The author (of this thesis) considered a more recent survey prior to the inception of the study to determine the prospects for the research if it was conducted online. The author considered a study, that had found similar response rates between postal and online completion of a survey, with online respondents having completed more items that postal respondents, as being relevant and important to the final choice of data collection method (Callas et al., 2010).

The benefits versus the weaknesses between two methods of data collection (online or paper) were reconsidered, and that reconsideration utilised the following information from the literature on conducting surveys.

Online surveys have: greater reach (to ensure that the survey reached practitioners throughout New Zealand); convenience (practitioners could complete at their own time and place); speed and flexibility (a web-link was all that needed to be supplied for participants to complete the

survey) and ease of data entry and analysis (Evans & Mathur, 2005). However, these benefits needed to be contrasted with the following considerations: not all respondents have the technological ability to navigate an online questionnaire; they may not be clear in how to answer the questions; the survey may be perceived as impersonal and that privacy issues need to be carefully managed (Evans & Mathur). Added to these issues, response rates may be less in online questionnaires (Nulty, 2008).

After consideration of these issues, it was decided that an online method of data collection was the best choice, allowing the on-line questionnaire to be conducted over a shorter time frame than a postal questionnaire, along with easier follow-up. *Survey monkey*® was chosen as the online survey platform, being relatively inexpensive, and straight forward for respondents to use. To facilitate a response rate that would allow for meaningful data to be collected the following steps were taken. An incentive was to be offered (a journal subscription was deemed appropriate), which would encourage the CM practitioners to respond. Incentives are commonly included in survey research as a way of maximising response rates (Nulty, 2008). The planning for the delivery and collection of the data from the survey included a systematic follow up plan, to also assist in producing a response rate that would allow for meaningful data for statistical analysis.

4.2.2 Design of online survey

The design of the on-line questionnaire was investigated using the guidelines articulated by Sue and Ritter (2012) to guide the design.

The design of the research needed to be *user friendly*. The researchers considered: the number of items; the formatting of items; the types of electronic methods for respondents being able to choose between answers; the inclusion of open-ended questions. What types of response format should be utilised for different types of questions? The selection included:

single response questions; multiple response questions and scale response questions (agree - disagree and numbered likert scales) (Sue & Ritter).

Following the decision to conduct the data collection online, the consideration was whether to have a solely quantitative dataset or to create a format that included qualitative data. It was decided to include some open-ended questions that could be analysed using qualitative methods (open coding) if clarification of the answers to the quantitative questions was deemed necessary[44].

The questionnaire was constructed using the following seven domains: practitioner demographic data; practice and referral characteristics of CM practitioners; academic qualifications of CM practitioners and self-reported appraisal of the CM practitioners' education process; perceptions and experiences regarding research, integration with CHC, registration of CM practitioners, and alignment to the of CM practitioners to the New Zealand Health Strategy. Each of these domains contained items relevant to the purpose of the study and the particular domain (see a copy of the questionnaire, Appendix 4).

To ensure that the questionnaire was user-friendly, with non-ambiguous questions in an easy-to-use format, and to be able to be completed in a reasonable time period, the questionnaire was piloted by having 4 separate CM practitioners complete it online. The practitioners who were chosen to be participatory pilot respondents[45] (Sincero, 2012) were a naturopath, a massage therapist, a medical herbalist and a homeopath. They were asked to rate the survey pilot. The mean completion time between the practitioners was 40 mins. Feedback from the

[44] This thesis did not utilise any of the qualitative data in the final analysis, as providing a landscape overview in response to the research questions were deemed to be better conducted by an analysis of the quantitative data.

[45] A *participatory pilot respondent* is a person chosen to complete a pilot questionnaire to assess whether the questionnaire design will produce the desired outcomes (i.e. answer the research questions) as well as be understandable, with clear questions and formatting. The term *participatory* simply means that they know that they are testing the survey in a pilot, rather than being respondents in the actual study data collection

participatory pilot respondents was that the questions were challenging but answerable and each one considered the questionnaire was useful to the CM professions. The participatory pilot respondents were also asked to assess the instructions supplied at the start of the questionnaire. The participatory pilot respondents' responses led to a clarifying of those instructions to better enable potential respondents to completely understand what was required to complete the online questionnaire. Ambiguous and difficult to understand questions were identified by the participatory pilot respondents and this feedback resulted in minor adjustments to the questionnaire. As the survey was primarily a cross-sectional analysis of the CM practitioners' current practices the risk of recall bias was deemed to be low (Godlonton et al., 2018).

4.2.2.1 Demographic and work practice items

This section focused on items related to personal variables, such as age, gender and ethnicity, as well as work location. Practice characteristics, professional experience and modalities practised form the core of the items contained in this domain. The section concluded with items about caseloads (per month) and mean consultation lengths (in minutes).

Apart from personal characteristics (age, gender, etc.) the items related to CM practice included the roles CM practitioners might play within CM practice, including: clinician; clinic administration; employment in health food stores or pharmacies; consultant to natural medicine companies, or education and research. It was recognised that the CM practitioners may have multiple roles related to CM and the CM practitioners were asked to identify the hours per week spent in each role area.

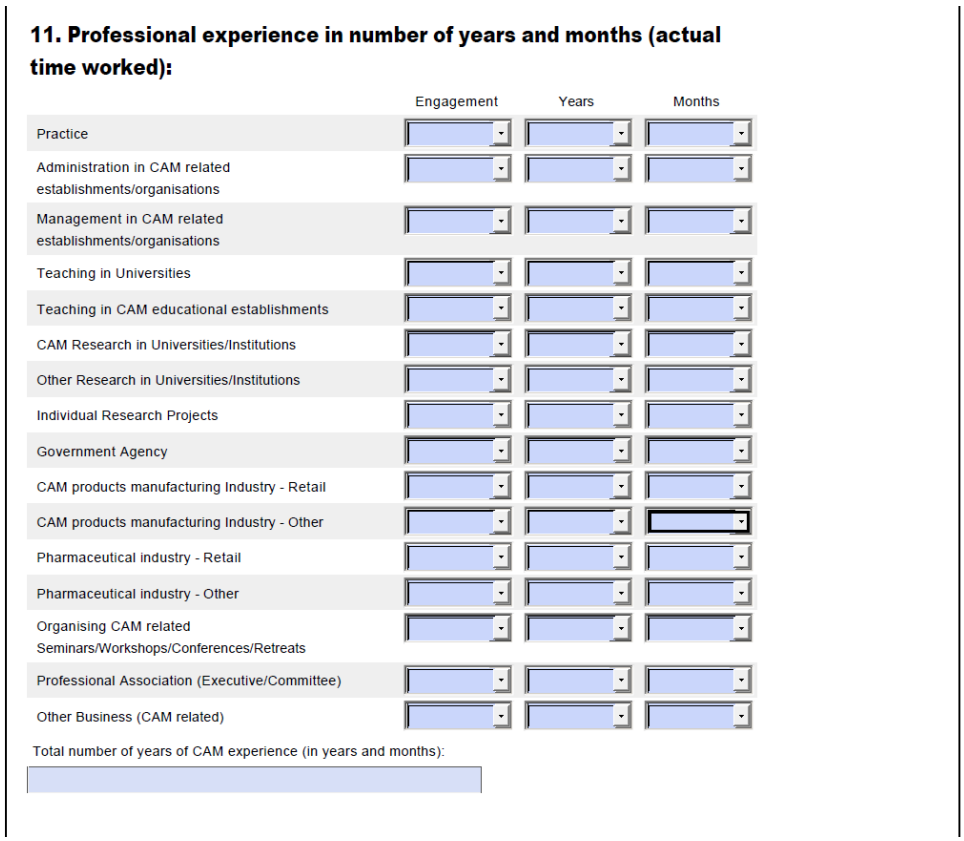
A section of the first domain in the questionnaire was also allocated to identifying the main setting in which CM practitioners delivered healthcare services. The choices for this item

included: home clinic; mobile clinic; professional rooms; medical centre; health food store; pharmacy or educational institution.

The types of practices where the CM practitioners delivered CM health care were investigated in a further item, which included choices of solo clinic, CM multi-disciplinary clinic and allied health clinic. A following item investigated practice features of the CM practitioners' practices, such as specialisation (i.e., a specific area of health (such as fertility, children's health, etc.), multi-modality approaches (e.g., massage plus herbal medicine or homeopathy plus nutrition, etc.) and holistic (body mind and spirit).

The following section of the questionnaire included items related to professional experience (see fig. 4.1), the nature of practices as well as mean clinical throughput.

Fig 4.1 Questionnaire items related to time in practice



11. Professional experience in number of years and months (actual time worked):

	Engagement	Years	Months
Practice			
Administration in CAM related establishments/organisations			
Management in CAM related establishments/organisations			
Teaching in Universities			
Teaching in CAM educational establishments			
CAM Research in Universities/Institutions			
Other Research in Universities/Institutions			
Individual Research Projects			
Government Agency			
CAM products manufacturing Industry - Retail			
CAM products manufacturing Industry - Other			
Pharmaceutical industry - Retail			
Pharmaceutical industry - Other			
Organising CAM related Seminars/Workshops/Conferences/Retreats			
Professional Association (Executive/Committee)			
Other Business (CAM related)			

Total number of years of CAM experience (in years and months):

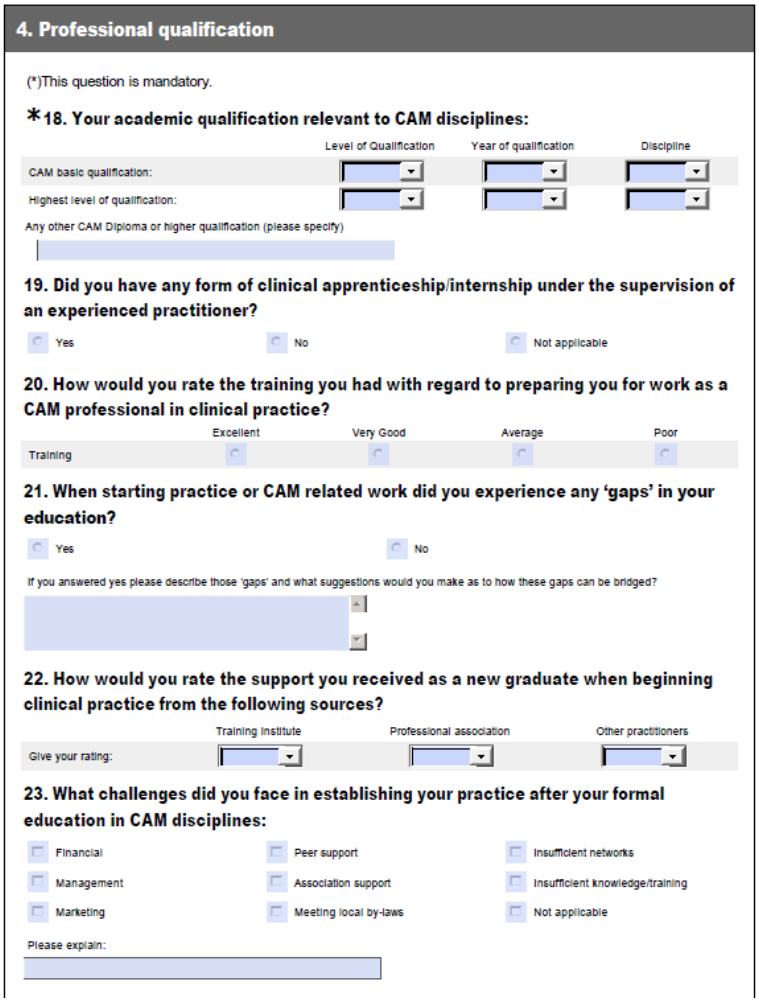
This item *professional experience in number of years*, allowed for the exploration of associations of the activities of the CM practitioners with the time (years and months) that they have been engaged in those activities.

An item on average caseload per month was included as part of the work practice section. The item included average caseload for new patients and average caseload for returning patients.

4.2.2.2 Professional qualifications and training

This domain contained six items related to the education of CM professionals and their level of qualification (see fig. 4.2).

Fig 4.2 Questionnaire items related to CM practitioner academic qualifications and education



The CM practitioners were asked about their highest qualifications in CM disciplines, as well as their highest qualifications in any field. It was recognised that many CM practitioners go on to higher education after completing their qualification in their discipline. At the time of the survey there were only four undergraduate degree qualifications available in CM disciplines in New Zealand. Some CM practitioners had progressed their education to higher qualifications (graduate and post-graduate) in mainstream health science and public health programmes. This was the reason the CM practitioners were asked about their highest qualification in any discipline. The questionnaire also gave the CM practitioners an opportunity to rate their CM education with regard to preparing the CM practitioners for professional practice, as well as a question as to whether there were 'gaps' in their CM education.

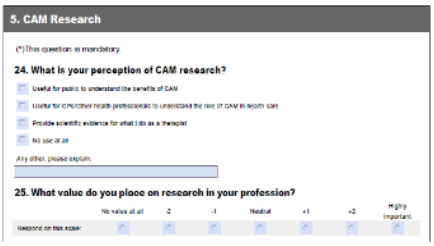
The survey contained items about the transition from student to practitioner, with items about support levels experienced to help with that transition as well as the challenges they experienced at the start of their professional lives, which allowed for multiple answers.

Related to CM practitioner experiences related to their education, a question was developed to inquire whether the CM practitioners had had any form of mentorship or apprenticeship at the start of their professional life. Complementary medicine in New Zealand has not developed formal internships or residencies, but there was the possibility that the CM practitioners may have had some form of mentorship.

4.2.2.3 CM research

Items about research covered areas of perception as well as practice, including the role evidence might play in determining treatment results (see fig. 4.3).

Fig 4.3 Questionnaire items related to CM practitioner perceptions of the value and applicability of evidence in clinical practice



As outlined in Chapter 3, the MACCAH report (Koopman-Boyden et al., 2004) identified a limited amount of CM research in New Zealand, as well as the need for educational institutions and practitioners to be engaged in research. This domain contained items that explored how aligned CM practitioners are to evidence-based practice (EBP), and how information published in peer-reviewed journals impacts on their clinical practices. This information was considered as potentially useful to educational institutions as well as informing the process of potential integration of CM with conventional health care, both at a policy level as well as possible development of processes of integration. The initial items in this domain focused on the value and impact of CM research in the clinical practice of CM practitioners.

Fig 4.4 Questionnaire items related to sources of evidence accessed by CM practitioners

The item in fig. 4.4 allowed for multiple choices. The items were included and designed to investigate how practitioners sourced evidence for practice. Item 32 was included to assess

the CM practitioners' commitment to including current evidence into their practices, with item 33 being a multiple-choice item that provided an explanation as to where the CM practitioners sourced their evidence.

4.2.2.4 Integrative medical practice

This domain was designed to answer sub-question v of the study that explored the CM practitioners' attitudes to and practices around integration of CM with CHC.

4.2.2.4.1 Attitudes to integrative practice among CM practitioners

Three items about CM practitioners' views on integration with CHC (item 36, item 49 and item 50 – see fig 4.5) were developed. Item 36 specifically asks the CM practitioners with which CHC practitioners they think CM practitioners should integrate. Item 49 explores the CM practitioners' general attitudes to IHC. Item 50 asked the CM practitioners about their view as to whether CM practitioner professional organisation is committed to integration of CM with CHC.

Fig 4.5 Questionnaire items related to CM practitioners' views on integrative medical practice

The terms "integrative" or "integrated" medicine indicate combinations of conventional and complementary / alternative medical treatments in the same medical practice/institution.

(*)This question is mandatory.

***36. Should CAM practitioners integrate with the following main stream / primary health care practitioners?**

	Strongly Disagree	-2	-1	Neutral	+1	+2	Strongly Agree
GPs	○	○	○	○	○	○	○
Specialists	○	○	○	○	○	○	○
Physiotherapists	○	○	○	○	○	○	○
Midwives	○	○	○	○	○	○	○
Nurses	○	○	○	○	○	○	○
Dietitians	○	○	○	○	○	○	○
Clinical Psychologists	○	○	○	○	○	○	○

Please explain your answer:

49. Do you believe integration is very important in today's health care scenario in NZ?

	Not important	-2	-1	Neutral (0)	+1	+2	Very important
Respond on this scale:	○	○	○	○	○	○	○

Any comments please:

50. Do you believe your professional organisation is committed to integration?

○ Yes ○ No ○ Don't know

4.2.2.4.2 Referrals between CM and CHC practitioners

Referrals between CM and CHC were considered important information (associated with integration of CM with CHC) to include in the study. The CM practitioners were asked about the numbers of referrals to and from CHC practitioners as well as the method of referral see figs. 4.6 and 4.7).

Fig 4.6 Questionnaire items related to CM practitioners' referrals to CHC

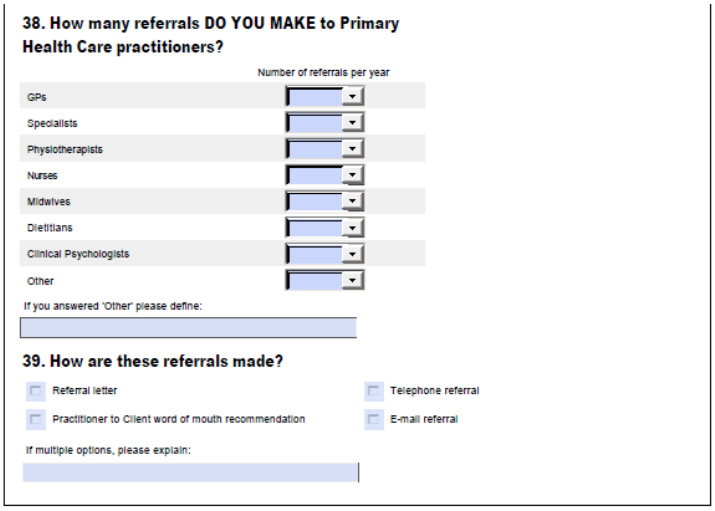
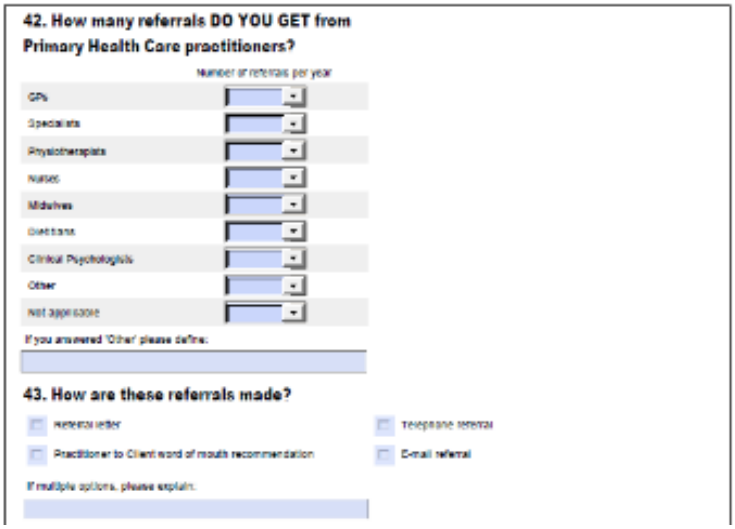


Fig 4.7 Questionnaire items related to CM practitioners' referrals from CHC



The four options for answering item 43 (fig. 4.7) were developed with input from the participatory pilot respondents who suggested that these were the most utilised methods of referral in CM. It was also recognised that many CM practitioners use more than one method, so this question allowed for multiple responses.

4.2.2.5 Registration and funding

This domain explored the attitudes and perceptions CM practitioners had to registration (statutory or voluntary). The drop-down box of item 54 of the questionnaire contained three options: 'yes", "no" and "don't know" (fig. 4.8). The drop-down box for type of registration contained the options: "statutory", "voluntary" and "other", with the respondents able to explain their option of "other" if they wished (fig. 4.8). The question of registering CM practitioners arose from the MACCAH report (Koopman-Boyden et al., 2004), as well as World Health Organisation recommendations for registration of CM in all countries where CM is practised (World Health Organisation, 2013). Item 55 (fig.4.9) asked whether there should be public or private funding (or a combination of public and private) for CM professionals.

Fig 4.8 Questionnaire items related to CM practitioners' views on registration

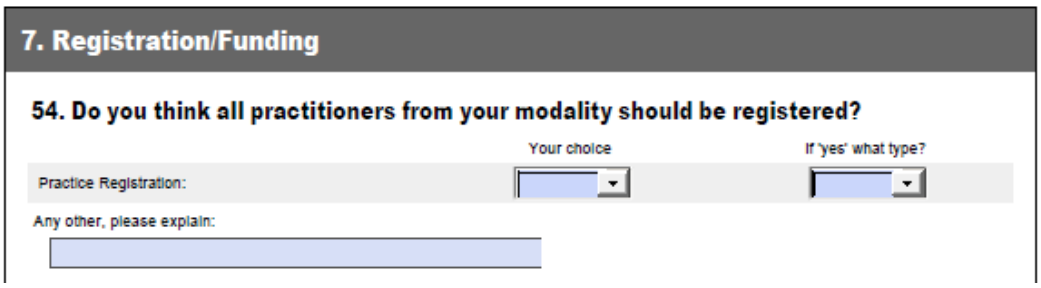
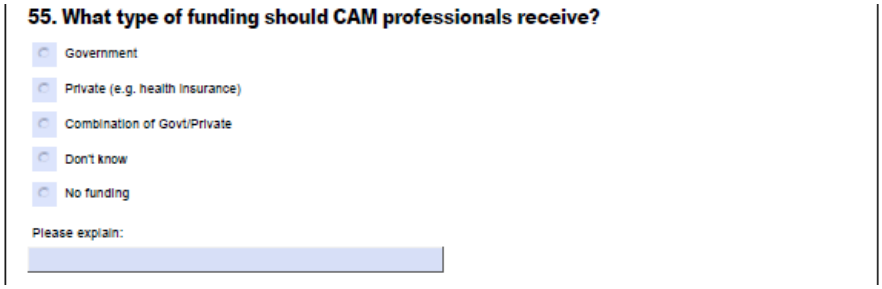


Fig 4.9 Questionnaire items related to CM practitioners' views on funding CM practice



4.2.2.6 The role of CM in New Zealand public health initiatives

The researchers drew upon government reports and surveys to investigate how CM practitioners might interact and contribute to public health initiatives in New Zealand. Item 60 (fig. 4.10) asks the CM practitioners how they perceived their roles in contributing to the New Zealand Health Strategy (Ministry of Health, 2000). Items 61 and 62 (fig. 4.11) investigate the New Zealand CM practitioners' utilisation of health services offered by the New Zealand Ministry of Health as well as involvement in New Zealand Ministry of Health community health programmes.

Fig 4.10 Questionnaire items related to CM practitioners' self-perceived contributions to the New Zealand Health Strategy

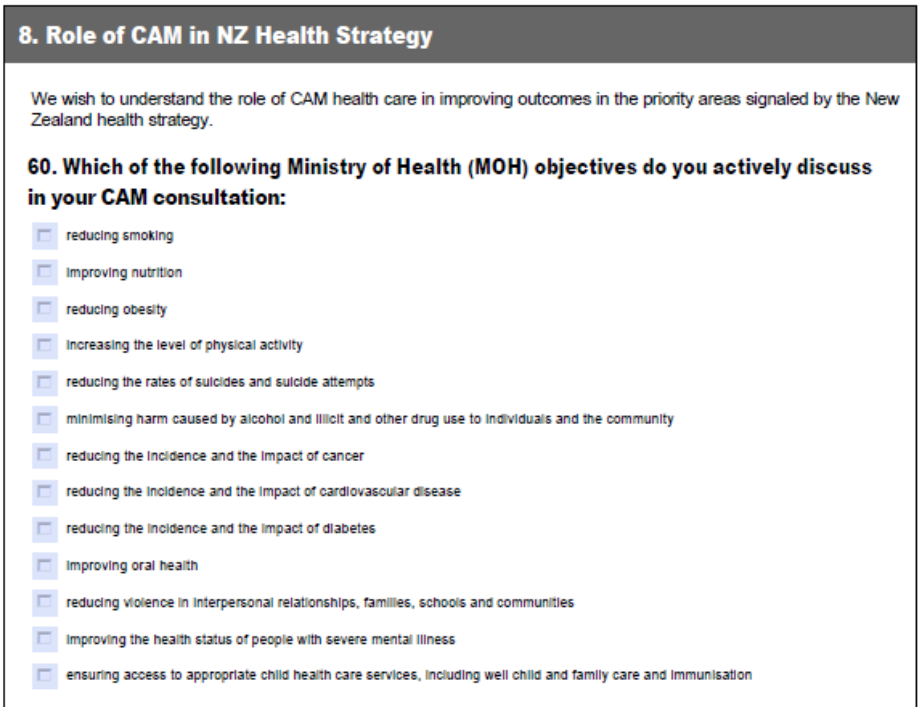
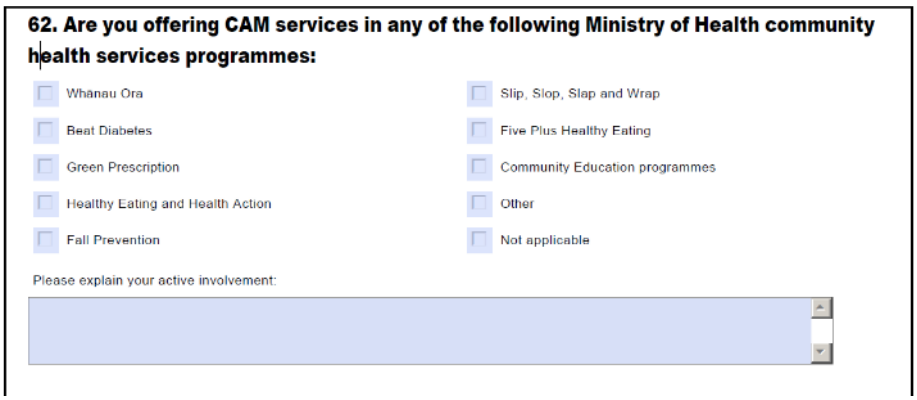


Fig 4.11 Questionnaire items related to CM practitioners' utilisation of New Zealand Ministry of Health services

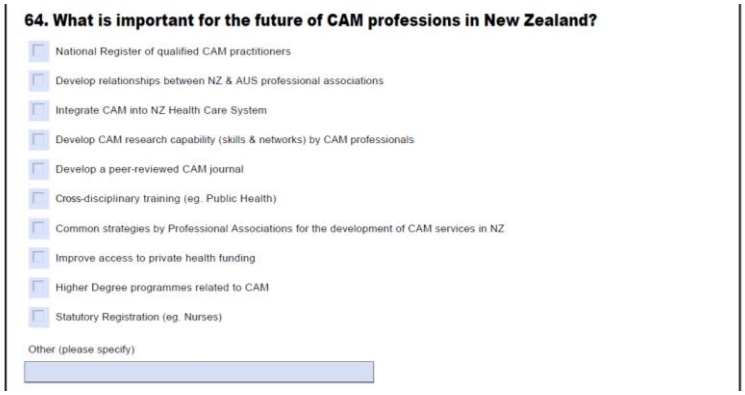
Fig 4.12 Questionnaire items related to CM practitioners' involvement in New Zealand Ministry of Health community health programmes



4.2.2.7 The CM practitioners' perceptions of important issues for the future of CM in New Zealand

One of the final items asked the CM practitioners what they considered to be the most important issues facing CM in New Zealand (fig. 4.13).

Fig 4.13 Questionnaire items related to CM practitioners' views of important issues facing CM in New Zealand



4.3 Data collection

4.3.1 Recruitment of respondents

It was decided to engage the services of the various CM practitioner professional organisations (CM practitioner professional organisations), through the two main umbrella registration organisations[46] for CM in New Zealand at that time (the New Zealand Natural Health Council and the New Zealand Charter of Natural Health Practitioners), as well as the New Zealand Council of Homeopaths (the only body registering homeopaths), to help distribute the information about the survey to their members (see appendix 2). (Similar information had been utilised in the approach to the various CM practitioner professional organisations when the idea of survey was mooted prior to the development.) The survey information given to the CM practitioner professional organisations, informed them that they would benefit from cooperation with the survey data collection, in that the survey outcomes would allow them to better understand their members' practices, as well as their members' attitudes to issues such as registration, integration, research and contributions to the New Zealand Health Strategy. The distribution of information to the CM practitioner professional organisations members primed the CM practitioners to prepare information for the survey to be utilised in answering the survey questions.

A relationship was established and developed with the registering bodies and the CM practitioner professional organisations, under the auspices of the New Zealand Colleges of Complementary Medicine Consortium. The registering bodies and the CM practitioner professional organisations were asked to help facilitate the progress of the project, by distributing information sent from the study, informing their members of how they might access the survey, and providing a web-link to the on-line questionnaire. This purposive

[46] These two registering bodies had several CM practitioner organisations as members, therefore they had access to a network of CM practitioners.

sampling process (Hibberts et al., 2012) ensured that the study was able to target CM practitioners from selected modalities. Responses were received from most CM practitioner professional organisations, but the organisations for osteopathy and chiropractic (statutory regulated CM disciplines) and acupuncture organisations did not respond.

The CM practitioner professional organisations were requested to formally respond with an agreement letter to distribute the information about the survey to their members. Most were enthusiastic about the potential benefit to members, but some agreements required more extensive discussion and consultation. The result of the correspondence and discussion with the CM practitioner professional organisations was that 22 CM practitioner professional organisations agreed to distribute the information, with one organisation (under one of the registration bodies) refusing to cooperate.

The survey implementation period was originally set at three months to ensure a meaningful response rate. However, after three months the response rate was insufficient to collect meaningful data, and the data collection period was extended. During this period, the CM practitioner professional organisations were contacted with a reminder letter and a request to distribute the letter to their members with an endorsement for their members to participate. There were respondents from all the 22 CM practitioner professional organisations, although numbers for most were not significant. Practitioners from three main disciplines (naturopathy/medical herbalist, homeopathy and massage therapy) responded in numbers that could be analysed to provide some meaningful results.

4.4 Statistical analysis

4.4.1 Analytic software

After consultation with a statistician, STATA® software (Stata Corp, 2020) was selected to conduct analysis of the data. STATA is suited to quantitative data analysis in health services research as it can be utilised in both public health and social sciences (Gutierrez, 2010).

4.4.2 Method for statistical analysis

Cross-sectional analysis was conducted using both descriptive and inferential statistical analysis. The initial descriptive analysis, utilising means and standard deviations (SD), or frequencies and percentages where appropriate, was conducted across all responses. In some instances, categorical variables were collapsed into binary variables if the cell frequencies were too small. A chi-square test, or Fisher's exact test was used to examine the association between two categorical variables. A chi-square test is suitable for determining associations between nonnumeric variables, where none of the groups is less than 10 (Turhan, 2020). A Fisher's exact test is used when at least one expected frequency in a fourfold table is less than five (Leon, 1998). A student's t-test analysed differences between the means across continuous binary variables (Knapp, 2016). A p-value of <0.05 was set to indicate statistical significance. For the domain *integrative medicine*, referral data were analysed using 5 or less as the initial category and 6 or more as the second category. Pragmatic reasons guided this decision.

4.5 Ethical considerations

The initial survey project was approved by Health and Disability Ethics Committee of the New Zealand Ministry of Health (Health and Disability Commission, 2016) on January 2011. In addition, ethical approval was obtained by the Human Research Ethics Committee at the University of Technology Sydney (reference #2013000183 – Appendix 5).

4.5.1 Confidentiality and anonymity methods

Anonymity and confidentiality are important for ethical conduct of electronic data collection (Sue & Ritter, 2012). Anonymity of the respondents was maintained by the application of codes to individuals by their respective CM registering bodies (the New Zealand Natural Health Council and the New Zealand Charter of Health Practitioners). The registering bodies then distributed information to their respective member CM associations, who passed that information to their members. The invitation to participate in the research was distributed to the associations through their respective registering body. This distribution network allowed the researcher to have some separation from potential participants. No participant's name was made known to the study. The respondents were provided with a background and guidelines for participation (including confidentiality information) in the first two pages of the survey (see appendix 4 – the survey questionnaire). Once the codes were allocated by the CM practitioner professional organisations, these organisations had no further part in the survey process. After 9 months the on-line questionnaire was closed to further participants. The dataset was then downloaded from Survey Monkey® to a spreadsheet, which was then stored on a secure server under password protection known only to the researchers. Variables were developed for each item in the questionnaire in a form that could be imported into the statistical software.

4.6 Chapter Summary

Chapter 4 describes the study development from conception to completion of the data analysis. Specific content samples of the questionnaire are presented to provide clarification of how data was collected in the survey. The recruitment of participants is explained along with anonymity and confidentiality methods utilised. The duration of the data collection process and the subsequent analysis of the data are communicated in the statistical analysis section. Ethical considerations in the study design conclude the chapter.

Chapter 5 The characteristics, experiences and perceptions of naturopathic and herbal medicine practitioners

5.1 Chapter introduction

5.1.1 Rationale for this analysis within the broader research project

This thesis aims to investigate the perceptions and practices of CM in New Zealand (see chapter 1, section 1.2.1). The purpose articulated in chapter 1 has been developed in response to the limited amount of research into CM practice in New Zealand. This thesis provides a broad depiction of New Zealand CM practitioner practices and perceptions that scopes the landscape of CM practice, allowing for an identification of issues, potentially setting an agenda for future investigation of CM practice in the future. It is noteworthy that the results presented here are the outcomes of the first empirical investigation of naturopaths and medical herbalists conducted in New Zealand.

With this in mind, (after a brief introduction) this chapter begins this analysis by investigating the responses of naturopath and medical herbalist respondents to the survey questions. The research objectives are fulfilled (in part) by the results presented in this chapter, answering the range of this thesis' research questions as they pertain to naturopaths and medical herbalists.

The responses of the naturopath and medical herbalist respondents are presented in this chapter, with some consolidation of the outcomes of the research analysis to ensure greater definition of the responses and clarity of the survey outcome data. Not all the survey responses from naturopaths and medical herbalists are shown in this chapter. (Further results are presented in chapter 8.) However, the results that are presented create a comprehensive picture of the characteristics, perceptions and practices of naturopaths and medical herbalists:

across the domains of: demographics and practice characteristics; attitudes to evidence-based practice and research; regulation of CM practice in New Zealand; integration of CM with mainstream healthcare in New Zealand; and the self-reported alignment of New Zealand CM practitioners with the New Zealand Ministry of Health strategic objectives. A brief discussion and conclusion follow to complete the chapter.

5.1.2 Publication results

The results contained within this chapter have been published as

Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2015). The characteristics, experiences and perceptions of naturopathic and herbal medicine practitioners: results from a national survey in New Zealand. *BMC Complementary and Alternative Medicine*, *15*(1), 114. A copy of the manuscript is found in appendix 6

5.2 Background: Naturopathy and herbal medicine in New Zealand

There has been a worldwide increase in CM use (Andrews G et al., 2012; Harris et al., 2012; Rogers, 2010). The most recent data from New Zealand (New Zealand) reports that in the twelve months prior to October 2006 at least 1 in 5 adults visited a CM practitioner (Ministry of Health, 2008). Naturopathic and herbal medicine practitioners constitute a substantial component of CM health care provision in New Zealand. The Natural Health Council (2014) and Natural Health Practitioners of New Zealand (2014) hold voluntary registers in naturopathy/herbal medicine and data from the 2006 Census (NZ Statistics, 2007) shows that naturopathy makes up 0.6% of the New Zealand healthcare workforce (no separate census data is available for HMPs, who are combined with other complementary practitioners). The 2013 census results show that the total New Zealand CM workforce is 2,055, with naturopaths constituting 21% of this workforce (NZ Statistics, 2015).

Naturopaths and herbal medicine practitioners exist predominantly outside publicly funded health care and beyond the practices of the conventional medical profession in New Zealand (Baer, 2009). CM more generally, of which naturopaths and herbal medicine practitioners form a substantial component, currently attracts no Government regulation in New Zealand, despite advice from a ministerial committee (Koopman-Boyden et al., 2004). A 2006 survey of New Zealand GPs showed that the rate of referral from GPs to naturopaths was 12.3% and the rate of referral from GPs to HMPs was 9.7%. However, this same 2006 study also identified the GPs opinions about the benefit of naturopaths and herbal medicine practitioners was 33% and 27.7% respectively (Poynton et al., 2006).

5.2.1 Practices and perceptions of naturopathic and herbal medicine practitioners outside New Zealand

Some research, undertaken outside New Zealand, has examined the practices and perceptions of naturopaths and herbal medicine practitioners. An Australian survey of naturopaths and herbal medicine practitioners found that while 76% of practitioners had undergraduate or post-graduate qualifications, only 29% sourced information from peer reviewed scientific journals (Braun et al., 2013a). Another study of naturopaths and herbal medicine practitioners in Australia found that most of their patients (74%) were self-referred (word of mouth) and that most naturopaths and herbal medicine practitioners surveyed practiced part-time with mean clinical hours of 23.8 per week (Bensoussan et al., 2004).

In North America naturopathy practice patterns have been studied, finding that naturopaths saw, on average, 31.6 patients per week; with 70% ordering diagnostic and screening tests (Boon, Cherkin, et al., 2004). Another study investigated naturopathy practitioner's relationship with conventional care, with 22% in frequent communication with primary care physicians and 30% reporting lack of cooperation, leading to lack of access to medical

records. This study also reports on naturopaths' experience with scientific research, with 30% indicating they have coordinated or conducted research (Standish et al., 2001).

As detailed in chapter 2, some research, undertaken outside New Zealand, has examined the practices and perceptions of naturopaths and herbal medicine practitioners.

Yet, to date, the characteristics, perceptions and experiences of naturopaths and herbal medicine practitioners in New Zealand remain beyond empirical investigation. Such research can offer important information necessary to help those providing and managing health practices and developing health care policy, to ensure safe, effective and coordinated patient care for all New Zealanders. In response to this significant research gap, this chapter reports findings from the first cross-sectional survey examining the characteristics, experiences and perceptions of naturopaths and herbal medicine practitioners in New Zealand. These descriptive data reveal information about the additions naturopaths and herbal medicine practitioners make to the healthcare workforce. Such research could provide background information for further studies that could effectively respond to the call from the New Zealand Ministerial Advisory Committee of Complementary and Alternative Health that there is a need for "quality, unbiased information on the safety and efficacy of CM modalities, and for further work to be done to identify and address consumers' needs for information about the practice of CM in New Zealand" (Koopman-Boyden et al., 2004).

5.3 Method

A survey was administered to a range of CM practitioners (including naturopaths and herbal medicine practitioners, homeopaths, massage therapists plus others) in New Zealand to examine their characteristics, perceptions and experiences relating to a range of key issues. This paper reports the analysis relating to the responses of the naturopaths and herbal medicine practitioners in the survey.

The study utilised an on-line survey via Survey Monkey. The survey was structured around seven domains: demographic practitioner data; practice and referral characteristics; academic qualifications; perceptions and experiences regarding research, integration and registration and alignment to the New Zealand health strategy (Minister of Health, 2000). Ethics approval was granted by the Ministry of Health (Ministry of Health) National Ethics Advisory Northern A committee and the Human Research Ethics Committee, University of Technology Sydney, Australia. Informed consent was implied by participation as per the New Zealand National Ethics Committee Guidelines (Health Research Council of New Zealand, 2014).

5.3.1 National sample of complementary medicine practitioners

Participants were recruited through the two main registering bodies for CM practitioners in New Zealand: the Natural Health Council and the Charter of Health Practitioners (now Natural Health Practitioners New Zealand). This recruitment method is similar to that employed in other surveys of naturopathic and herbal medicine practitioners (Boon, Cherkin, et al., 2004a; Braun et al., 2013a; Casey et al., 2008a). Both registering bodies agreed to administer the survey via their affiliated associations, (n = 338 for naturopaths and herbal medicine practitioners' associations). Upon receiving the association membership figures, each association was allocated specific codes (to avoid duplicate responses). These codes were subsequently allocated to individual members by their own associations, along with the web address of the survey, ensuring anonymity of the respondents. As not all New Zealand naturopaths identified in the census (NZ Statistics, 2007) are registered with an association, the percentages used in the analysis were only calculated for practitioners who received an invitation to complete the survey. This does not represent the sum total of New Zealand naturopaths.

5.3.2 Survey measures

The survey examined demographic data, specifically age, gender, ethnicity and practice location identified by New Zealand District Health Board, and whether the naturopaths and herbal medicine practitioners' practice was in a city, urban or rural location(s). Practitioner characteristics examined in the study were: average caseloads, years of professional experience, highest level of qualification and attitudes to research. The survey also asked about the naturopaths and herbal medicine practitioners' attitudes to integration and naturopaths and herbal medicine practitioners' modes and rates of referral to a range of conventional health care practices. naturopaths and herbal medicine practitioners were asked whether they considered that they should be registered and whether that registration should be statutory or voluntary. This section also included questions on whether naturopaths and herbal medicine practitioners should receive Government or private funding (or a combination of both) as well as their own use of indemnity insurance schemes. The survey also included a question examining naturopaths and herbal medicine practitioners' perceptions of their alignment to the public health goals stated in New Zealand Health Strategy (Minister of Health, 2000).

5.3.3 Analysis

Initial descriptive analysis was undertaken for all responses using means and standard deviations or frequencies and percentages where appropriate. A chi-square test was used to examine the association between two categorical variables and a student's t-test was used to test for differences between means across a binary variable. A p-value of <0.05 was set to indicate statistical significance. All analyses were undertaken using STATA software. Data for referrals were analysed using 5 or less as the first category, and then 6 or more for the second for pragmatic reasons.

5.4 Results

A total of 107 naturopaths and herbal medicine practitioners responded to the survey representing a response rate of 32% for these modalities. Most participants were female (91%) and a significant portion of participants were aged 45 to 54 years (38%), with only 12% aged 35 years or younger. Most practitioners (53%) had an undergraduate or postgraduate degree (in a related discipline), with their base naturopaths and herbal medicine practitioners qualification predominantly at a Diploma or Advanced Diploma level (82%). Modalities (other than naturopathy and herbal medicine) practiced included: nutritional supplementation (71%); nutritional counselling (63%); relaxation massage (35%); therapeutic massage (29%); homeopathy (19%); aromatherapy (14%), spiritual healing (9%) and yoga therapy (4.7%).

5.4.1 Practice characteristics

Ninety percent of naturopaths and medical herbalists were in part-time practice. Clinical practice and practice management constituted the majority of professional hours spent per week (mean = 15 hours) by the naturopaths and herbal medicine practitioners, followed by: manufacturing and retail-related tasks (mean = 9 hours); education-related tasks (mean = 3 hours); administration tasks (mean = 3 hours); research (mean = 1 hour); training (mean = 1 hour); and other tasks (mean = 1 hour).

Most naturopaths and herbal medicine practitioners self-reported that they were located in urban areas (84%), with practices mainly in solo clinics (56), but also based in multi-disciplinary clinics alongside a range of CM and non-CM practitioners (33%) and other types of practices, including health food stores and pharmacies (11%). The majority of the respondents (60%) had more than 10 years of experience in practice. Only 26% of the naturopaths and herbal medicine practitioners practiced full-time, with 64% practicing part-time and 10% occasionally. Most practitioners had utilised more than one therapy in their

practice (83%), with only 17% specialising in a single therapy or area of practice. The average new-patient caseload (per month) was 8.0 clients, while the average follow-up caseload was 20.3 clients (per month). Consultation length for new patients was reported as 76.2 minutes on average, whereas most follow-up consultations were an average of 37.1 minutes.

5.4.2 Research

Most naturopaths and herbal medicine practitioners (80%) perceived research as being useful for validating their practice, with ninety-three per cent placing high value on research, and seventy-eight per cent identifying it as of high or moderate impact on their practice behaviour.

Whilst most naturopaths and herbal medicine practitioners (95%) utilised client-reported changes of symptoms as a main measurement of outcome, 60% of respondents employed blood tests and medical parameters, and 38% used other quantifiable measures, such as Health Related Quality of Life, as indicators of therapeutic effectiveness and 33% naturopaths and herbal medicine practitioners' specific assessment methods (such as iridology or live blood analysis). Whilst 60% of practitioners agreed they had the skills to identify and analyse published research, and make meaningful clinical decisions based on this source of evidence, 26% identified themselves as having the skills to actually conduct research. Of those naturopaths and herbal medicine practitioners who reported that they had no skills in interpreting research, time (38%) and financial restraints (26%) were the main reasons given for this situation. However, only 30% of respondents reported that they remained up to date with research findings and only 35% reported using peer-reviewed scientific journals to keep up to date with knowledge in their field. Respondents were asked if they kept up to date with research findings and, if they did, where did they access information about research. Of those participants who did access research material, the sources of

researched information were as follows: 82% from attending manufacturer's/supplier's seminars; 72% via newsletters from manufacturers and suppliers; 67% via Google search engine web articles; 51% from news articles; 50% via online scientific journals; 49% from health-specific magazines; 43% via association meetings; 35% via peer-reviewed scholarly journals; 20% from attending scientific presentations; 19% from attending international conferences; and 18% via reading trade journals.

No correlation was found between age, years of experience, CM related activities, caseloads, or educational qualification in relation to either using researched information to validate practices or in relation to the impact of research on practice (see Table 5.1).

Table 5.1 The association between naturopathic and herbal medicine practitioner characteristics and aspects of research

Practitioner and Practice-Related Characteristics		Using Research for Validating Practice			Research Impact on Practice		
		Useful (n = 93)	Not Useful (n = 2)	p-value	High/Moderate (n = 84)	Low (n = 17)	p-value
		Mean (SD)	Mean (SD)				
Years of Experience		11.1 (9.0)	3.5 (3.5)	0.240	2.7 (1.7)	2.9 (1.3)	0.643
Hours Spent on CM-Related Training		1.5 (1.1)	1.9 (1.6)	0.403	1.4 (1.1)	2.0 (1.8)	0.205
Hours Spent on Administrative Tasks		2.1 (1.6)	1.5 (1.1)	0.181	2.0 (1.5)	2.0 (1.5)	0.644
Average Caseload Per Month (all)		31.4 (29.6)	32.2 (29.8)	0.908	31.5 (30.5)	26.0 (23.0)	0.488
		%	%		%	%	
Age	22-44	36.4	100	0.066	38.1	37.5	0.964
	>44	63.6	0.0		61.9	62.5	
Education Diploma		47.3	33.3	0.627	42.9	46.7	0.791
Under-graduate		30.9	40.0		35.7	26.7	
Post-graduate		21.8	26.7		21.4	26.6	
Sufficient Skills to Conduct Research	Yes	37.9	50.0	0. 728	37.5	41.7	0.788
	No	62.1	50.0		62.5	58.3	
Sufficient Skills to Yes		58.0	100	0.396	60.7	52.9	0.552
Interpret Research No		42.0	0.0		38.3	47.1	

Similarly, no correlation was found between skills to either interpret or conduct research and the validation or impact of research upon the naturopaths and herbal medicine practitioners' practice (Table 5.1).

Most naturopaths and herbal medicine practitioners (70%) identified a need for a national CM research unit in New Zealand, which was seen as a useful development to help provide guidance regarding: funding sources and opportunities (58%); developing study protocols and designs (54%); research methodology (51%); networking (50%); and collaboration (48%).

5.4.3 Regulation and funding

Registration was supported by a significant majority (82%) of naturopaths and herbal medicine practitioners. Of the 88 practitioners who favoured some form of registration, 75% were in favour of statutory registration and 25% voluntary registration. No relationship was found between naturopaths and herbal medicine practitioners' attitudes to registration and practitioner age (p = 0.735), years of experience in practice (p = 0.239), or academic qualification (p = 0.348) (Table 5.2).

Table 5.2 The association between naturopathic and herbal medicine practitioner characteristics and aspects of regulation and funding

Practitioner Characteristics		In Favour of Registration			In Favour of Combined Government and Private Funding		
		Yes (n = 88)	No (n = 19)	p-value	Yes (n = 74)	No (n = 33)	p-value
		Mean (SD)	Mean (SD)				
Years of Experience		2.8 (1.7)	2.8 (1.7)	0.239	2.8 (1.6)	2.5 (1.8)	0.353
		%	%		%	%	
Age	22-44	37.9	42.1	0.735	37.8	40.6	0.787
	>44	62.1	57.9		62.2	59.4	
Education							
Diploma		41.9	25.0	0.348	42.9	50.0	0.813
Under-graduate		38.7	25.0		35.7	27.8	
Post-graduate		19.4	50.0		21.4	22.2	

Most naturopaths and herbal medicine practitioners favoured some practice subsidy funding being available, with 69% in favour of a combination of Government and private (insurance) subsidies. Sixty-one per cent of the naturopaths and herbal medicine practitioners had professional indemnity insurance. There was no significant association between funding preference and age ($p = 0.787$), practice years ($p = 0.353$) or academic qualifications ($p = 0.813$). (Table 5.2)

5.4.4 Integrative practice

Most naturopaths and herbal medicine practitioners (83%) favoured integration with conventional care providers. Specifically, the percentage of naturopaths and herbal medicine practitioners who agreed that they should integrate with a range of different conventional primary health care practitioners was: 89% with regards to GPs (table 5.3); 87% with regards to specialists (table 5.4); 73% with regards to physiotherapists (table 5.5); 91% with regards to midwives (table 5.6); 82% with regards to nurses; 74% with regards to dietitians; and 81% with regards to clinical psychologists (table 5.7). The average number of referrals per year made by each naturopaths and herbal medicine practitioners to particular conventional primary health care providers was as follows: 12.0 to GPs (representing 3.3% of annual patient visits) ; 7.1 to specialists (1.9%) ; 7.5 to physiotherapists (2.1%); 7.9 to midwives (2.2%); 4.5 to nurses (1.2%); 7.5 to dietitians (2.1%); and 4.8 to clinical psychologists (1.3%). The average number of referrals per year received by each participant from particular conventional primary health care practitioners was as follows: 10.1 from nurses; 8.7 from midwives; 7.1 from GPs; 5.3 from physiotherapists; 4.7 from clinical psychologists; 3.5 from specialists; and none from dietitians.

The following reasons were given by the naturopaths and herbal medicine practitioners as to why they referred to conventional primary health care practitioners: to treat conditions outside their own scope of practice (70%); in recognition of early warning signs that require

further investigation (77%); for medical diagnosis of a condition (72%); for conditions that are more suited to other treatments beyond their own (63%); for conditions too severe to deal with (62%); for conditions that have not responded to current naturopathic and herbal medicine treatment (37%); to gain clearance or rule out contraindication for naturopaths and herbal medicine practitioners treatment (37%); for conditions not covered by their own training (33%); and for conditions for which naturopaths and herbal medicine practitioners had limited success (21%). However, naturopaths and herbal medicine practitioners' referrals to and from conventional providers were primarily by word of mouth with 85% of referrals to conventional practitioners and 75% of referrals from conventional practitioners being via this method.

Tables 3, 4, 5, 6 report the relationships between referrals from naturopaths and herbal medicine practitioners to selected conventional practitioners and: age; years of experience; average caseloads; and academic qualifications. A significant relationship exists between referrals to specialists and average caseloads (of naturopaths and herbal medicine practitioners) per month ($p = 0.02$), as well as between age and referrals to clinical psychologists ($p = 0.062$).

Table 5.3 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and GPs

Practitioner and Practice-Related Characteristics	Annual Number of Referrals Made to a GP			Annual Number of Referrals Received From a GP		
	<6 (n = 35) Mean (SD)	6 or more (n = 45) Mean (SD)	p-value	<6 (n = 37)	6 or more (n = 23)	p-value
Years of Experience	12.1 (10.3)	10.1 (8.2)	0.346	2.9 (1.6)	3.3 (1.5)	0.275
Average Caseload Per Month (all)	23.8 (22.6)	39.4 (33.8)	0.025	33.9 (24.4)	41.6 (36.0)	0.298
	%	%		%	%	
Age 22-44	37.1	40.9	0.733	25.0	26.1	0.925
>44	62.9	59.1		75.0	73.9	
Education						
Diploma	50.0	42.9	0.130	34.5	53.3	0.261
Under-graduate	39.3	25.7		44.8	20.0	
Post-graduate	10.7	31.4		20.7	26.7	

Table 5.4 The association between practitioner characteristics and referrals made from naturopathic and herbal medicine practitioners to specialists[47]

Practitioner and Practice-Related Characteristics	Annual Number of Referrals Made to a Specialist		
	<6 (n = 30) Mean (SD)	6 or more (n = 9) Mean (SD)	p-value
Years of Experience	11.5 (9.4)	8.5 (7.1)	0.413
Average Caseload Per Month (all)	26.6 (19.0)	49.0 (36.1)	0.020
	%	%	
Age 22-44	40.0	37.5	0.898
>44	60.0	62.5	
Education			
Diploma	45.4	57.1	0.532
Under-graduate	36.4	14.3	
Post-graduate	18.2	28.6	

[47] Note: No referrals were received by the naturopaths and herbalist respondents from specialists

Table 5.5 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and physiotherapists

Practitioner and Practice-Related Characteristics	Annual Number of Referrals Made to a Physiotherapist			Annual Number of Referrals Received From a Physiotherapist		
	<6 (n = 23)	6 or more (n = 6)	p-value	<6 (n = 12)	6 or more (n = 6)	p-value
	Mean (SD)	Mean (SD)				
Years of Experience	12.0 (10.2)	5.5 (6.8)	0.160	2.8 (1.8)	3.3 (1.4)	0.559
Average Caseload Per Month (all)	38.7 (29.4)	24.7 (15.1)	0.275	43.1 (23.0)	31.0 (44.9)	0.455
	%	%		%	%	
Age	34.8	50.0	0.494	50.0	16.7	0.171
	65.2	50.0		50.0	83.3	
Education						
Diploma	50.0	25.0	0.450	42.9	33.3	0.961
Under-graduate	43.8	50.0		28.6	33.3	
Post-graduate	6.2	25.0		28.6	33.4	

Table 5.6 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Midwives

Practitioner and Practice-Related Characteristics	Annual Number of Referrals Made to a Midwife			Annual Number of Referrals Received From a Midwife		
	<6 (n = 22)	6 or more (n = 16)	p-value	<6 (n = 20)	6 or more (n = 17)	p-value
	Mean (SD)	Mean (SD)				
Years of Experience	12.8 (10.2)	9.8 (7.4)	0.346	2.7 (1.9)	2.9 (1.5)	0.685
Average Caseload Per Month (all)	35.1 (28.8)	36.3(30.7)	0.909	29.0 (27.1)	40.0 (27.4)	0.234
	%	%		%	%	
Age	2-44	29.2	56.3	0.087	30.0	41.2	0.478
	>44	70.8	43.7		70.0	58.8	
Education						
Diploma	41.2	50.0	0.114	40.0	45.4	0.497
Under-graduate	41.2	8.3		40.0	18.2	
Post-graduate	17.6	41.7		20.0	36.4	

Table 5.7 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Clinical Psychologists

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Clinical Psychologist			Annual Number of Referrals Received From a Clinical Psychologist		
		<6 (n = 26)	6 or more (n = 12)	p-value	<6 (n = 11)	6 or more (n = 4)	p-value
		Mean (SD)	Mean (SD)				
Years of Experience		14.0 (2.2)	9.3 (7.9)	0.196	3.4 (1.9)	4.3 (0.5)	0.374
Average Case-Load Per Month (all)		37.0 (26.2)	45.8 (29.1)	0.367	35.5 (21.3)	76.6 (54.8)	0.047
		%	%		%	%	
Age	22-44	23.1	54.6	0.062	27.3	50.0	0.409
	>44	76.9	45.4		72.7	50.0	
Education							
Diploma		55.6	57.1	0.446	100.0	66.7	0.168
Under-graduate		33.3	14.3		0.0	0.0	
Post-graduate		11.1	28.6		0.0	33.3	

Most of the naturopaths and herbal medicine practitioners surveyed (60%) did not utilise electronic medical records/client data sheets in their practice while some (31%) reported

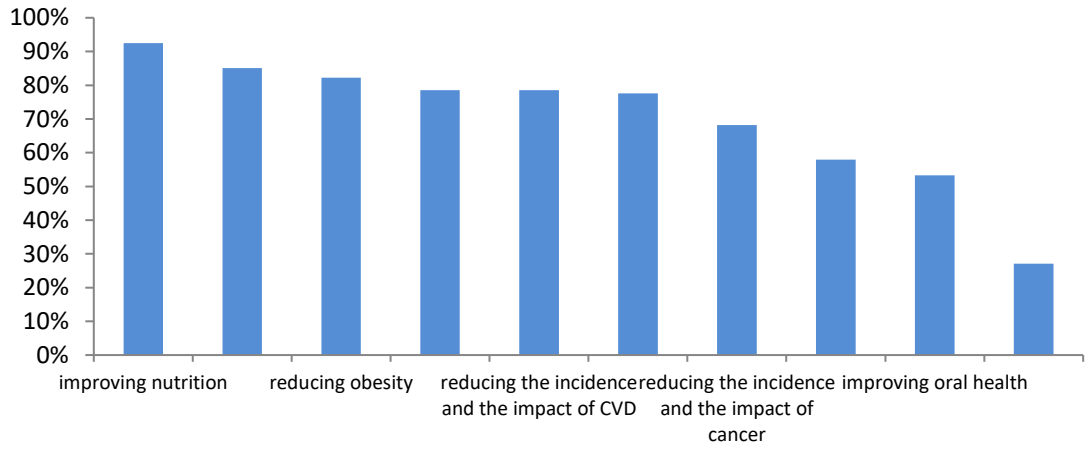
using both electronic and paper-based clinical records. Only 4% of the respondents employed a purely electronic medical records/client data system. Respondents were asked what information they would find useful if they had access to patients' medical records. The responses were as follows: prescribed medication (94%); results of diagnostic tests (94%); medical history (90%); surgical information (90%); medical diagnosis (89%); immunisation history (80%).

5.4.5 Contribution to national health objectives

The naturopaths and herbal medicine practitioners were asked to assess whether they perceived their practice as being aligned to the New Zealand Ministry of Health published public health objectives (Minister of Health, 2000). The areas where the naturopaths and herbal medicine practitioners perceived they made their greatest contributions were: improving nutrition (93%); increasing physical activity (85%); reducing obesity (82%); reducing smoking (79%); reducing the incidence and the impact of CVD (79%); reducing the incidence and the impact of diabetes (78%); and reducing the incidence and the impact of cancer (68%).

See Figure 5.1 naturopaths and herbal medicine practitioners perceived alignment with New Zealand national health goals.

Fig. 5.1 naturopaths and herbal medicine practitioners perceived alignment with New Zealand national health goals.



5.5 Discussion

This paper reports the first in-depth examination of naturopaths and herbal medicine practitioners practice in New Zealand. The study identified a number of interesting findings.

5.5.1 Demographics

The results suggest that naturopaths and herbal medicine practitioners are predominantly older than 35. This may be a consequence of lack of registration leading to lack of career opportunities, or naturopaths and herbal medicine practitioners being seen as a 'secondary' occupation by older women mainly.

5.5.2 Integrative practices by naturopaths and herbal medicine practitioners

The data in the study suggests that referrals between naturopaths and herbal medicine practitioners and conventional care are occurring regularly (albeit on an informal basis). This is similar to referral practices reported between HMPs and conventional care in Australia (Casey et al., 2008a), as well as other countries (Adams et al., 2011), but there is little data concerning the method of referral internationally or in New Zealand. The informality of referral mechanisms is highlighted in the survey results. Referral by word of mouth from naturopaths and herbal medicine practitioners to conventional care (and vice versa) is particularly predominant. This is an important area for future research examination, as there

is potential, within a purely patient mediated system of referral such as word of mouth, for a lack of information (or misinformation) being communicated by the patient to either practitioner, which could compromise safety (particularly in drug-herb or drug-nutrient interactions) and effectiveness (particularly because of the lack of access to diagnosis and treatment information between practitioners). However, the prevalence of referral for conditions outside the naturopaths and herbal medicine practitioners' scope of practice indicates a degree of self-regulation around safety issues in relation to interaction with conventional care. This finding could be confirmed by a more in-depth study of referral perceptions and practices between naturopaths and herbal medicine practitioners and GPs. Whilst several important studies have investigated referrals between conventional care and CM (Adams et al., 2011; Bensoussan et al., 2004; Bishop et al., 2013; Casey et al., 2008a; Frawley J et al., 2014; Greenfell et al., 1998; Sewitch et al., 2011; Shmueli & Shuval, 2006; Smith et al., 2014; Wong et al., 2010), the method of referral has seldom been identified and described. A study of Australian and New Zealand acupuncturists has identified word of mouth as the main referral method (Smith et al., 2014), which is consistent with the findings in the survey. Another New Zealand study of osteopaths found that referral was primarily facilitated through patient networks, with word-of-mouth recommendation highly valued (Bishop et al., 2013). In many instances the GP will primarily refer at the request of the patient (Frenkel et al., 2010; Sewitch et al., 2011; Wong et al., 2010) despite the reluctance of many patients to discuss CM options with their GP (Ben-Arye & Frenkel, 2008; Wong et al., 2010).

No statistical correlations were found between naturopaths and herbal medicine practitioners' referrals to GPs or referrals received by naturopaths and herbal medicine practitioners from GPs and age, practice years and academic qualifications (Table 3). Those practitioners with a high monthly caseload made more referrals to GPs ($p = 0.025$) and specialists ($p = 0.020$),

compared to those with a low monthly caseload (Tables 3 and 4). The implications of these results for naturopaths and herbal medicine practitioners need further investigation, but they may possibly indicate that those naturopaths and herbal medicine practitioners' who practice full time have a greater understanding of the need to develop integrative networks with a variety of conventional practitioners.

No statistical correlations were found between referral to other conventional practitioners and age, practice years or academic qualifications (Tables 5, 6, 7). It is unclear as to whether these referral patterns reflect the attitudes to naturopaths and herbal medicine practitioners from conventional practitioners. An increase in referrals could potentially be facilitated by greater recognition, as lack of statutory registration, in Australia, has been shown to be a hurdle to referrals to CM practitioners (McCabe, 2005).

5.5.2 Registration and regulation

Our study findings showing that practitioners favour registration is not dissimilar from data on naturopaths and herbal medicine practitioners' preferences reported in Australia [10]. Most of the practitioners in the study favoured a mix of government and private medical insurance funding for naturopaths and herbal medicine practitioners. However, more investigation needs to be carried out to determine if funding is a major driver influencing practitioners' perceptions towards seeking statutory registration. A strong correlation exists between naturopaths and herbal medicine practitioners favouring integration and favouring registration implying that, in the perception of naturopaths and herbal medicine practitioners, these two issues may be linked. This perception by naturopaths and herbal medicine practitioners may be justified by the favourable attitudes and referral patterns of New Zealand GPs to osteopaths and chiropractors (statutory registered CM modalities), which indicate a degree of acceptance and integration (Poynton et al., 2006).

Statutory registration of CM modalities worldwide is supported by the World Health Organisation in its Traditional Medicine Strategy (World Health Organisation, 2013) and patient use of naturopaths and herbal medicine practitioners' services would appear to create some impetus for such registration (Kelner et al., 2004b).

Internationally there is a move towards registration of naturopaths and herbal medicine practitioners in a number of countries (Kraft, 2009; McIntyre, 2014; United Kingdom Department of Health, 2004). The United States and Canada have licensing (registration) of naturopaths in a number of states (Kelner et al., 2004b). International harmonisation of standards of education and practice for naturopaths and herbal medicine practitioners has the potential to create an environment that supports moves towards registration in New Zealand. This would have potential for greater employment outcomes for naturopaths and herbal medicine practitioners, particularly if their perception of alignment with the New Zealand Health Strategy (Minister of Health, 2000) goals proves to be valid.

5.5.3 Research

This study results indicates that, whilst research is valued and perceived by naturopaths and herbal medicine practitioners to have an impact on practice, many naturopaths and herbal medicine practitioners acknowledged they had no skills in interpreting research. This lack of research literacy could be reflected in the prevalence of reliance on anecdotal (client reported) assessment of treatment effectiveness. It is possible that a general lack of familiarity with research methodology could affect naturopaths and herbal medicine practitioners' perspectives, and lead to the reliance on manufacturer's seminars and trade newsletters as sources of researched information about naturopaths and herbal medicine practitioners' treatments. Internationally, studies have shown that CM practitioners rely on secondary sources of researched information, such as texts, traditional theory and practice, the internet, manufacturer's information and information from educators (Braun et al., 2013a; Casey et al.,

2008; Ryan, 2007; Smith et al., 2005; Steel & Adams, 2011a). The reliance on industry information among naturopaths and herbal medicine practitioners is not dissimilar to the results of 3rd and 4th year medical residents in the United States that showed that those who were reliant on pharmaceutical industry sources for their prescribing behaviours were less likely to utilise researched evidence in practice and recommends educational interventions to reverse this situation (Austed et al., 2014). It is possible naturopaths and herbal medicine practitioners favour approaches to treatment that incorporate clinical experience, traditional information and patient circumstances to guide treatment, rather than relying on research as a primary source of evidence for practice (Carruthers & Paxton, 2012; Jagtenberg et al., 2006; Wardle et al., 2013). A survey of CM practitioners (including 68 naturopaths and herbal medicine practitioners) attitudes and use of evidence in Australia found that published clinical evidence ranked fourth in information source preference with traditional knowledge, texts and clinical practice guidelines being given priority. Similar to the current study lack of skills was given a main reason for not implementing evidence in practice. Other reasons were lack of evidence sources, time and industry support (Leach & Gillham, 2011). It must be noted however that this attitude is not limited to naturopaths and herbal medicine practitioners. A systematic review of the barriers to GPs' use of evidence-based medicine found that GPs utilised clinical preference and experience, as well as patient's situations and the practice setting over a purely 'evidence-based' approach (Zwolsman et al., 2012). A 2008 New Zealand study of practice nurses showed that there was still a lack of knowledge of evidence-based clinical guidelines, with variable use among those who had that knowledge (Hoare et al., 2008) indicating a similarity between naturopaths and herbal medicine practitioners and nurses in their attitude to evidence and evidence-based medicine. naturopaths and herbal medicine practitioners' attitude to research and evidence-based medicine could also be a result of current educational provision in naturopaths and herbal

medicine practitioners, with a lack of commitment to developing research capacity and outputs (Mills et al., 2002; Toupin April & Gabthey, 2013; Wardle et al., 2012). A national CM research unit (as favoured by the naturopaths and herbal medicine practitioners surveyed) has the potential to address some of current research challenges that appear to face the sector in New Zealand.

One limitation of the study is the thirty-two per cent response rate. However, this is typical for health workforce studies of this kind (Smith et al., 2005b), particularly those conducted on-line (Aitken C et al., 2008). We selected a convenience sample to capture those practitioners who belonged to active organisations. We considered that their views would be indicative of those naturopaths and herbal medicine practitioners who could truly represent the practices and perceptions of the majority of the professions. Another possible limitation is that it is unclear as to whether referral data was based on case-records or naturopaths and herbal medicine practitioners' recollection, as the question simply asked the practitioners to state the numbers.

5.5.4 Contribution to national health objectives

The results suggest that naturopaths and herbal medicine practitioners consider that their practices are effective in contributing significantly towards New Zealand meeting its National Health Strategy (Minister of Health, 2000). Some preliminary research from the United States suggests that CM is utilised by a section of the population for disease prevention, with naturopathy used by 0.3% (Hawk et al., 2012a) with one study suggesting 25% of the United States population utilises CM for health promotion compared to 17% utilisation for treatment purposes (Davis et al., 2011). In New Zealand, a study of CM use in paediatric patients found that an average of 7% used CM for prevention purposes (n = 70) (Wilson et al., 2007). naturopathy has been shown to have potential in prevention of cardiovascular disease (one of the New Zealand national health objectives) in a pragmatic randomised controlled trial in

Canada (Seely et al., 2013). In a United States review of the role of CM under the Affordable Care Act, Thompson and Nichter (2014) argue that CM practitioners are well placed to provide cost-effective "preventive and promotive" health services. This argument is echoed (with specific reference to naturopathy in India) by Tripathy (2015), as well as Kraft (2009). Whilst these results are significant, research into naturopaths and herbal medicine practitioners in health promotion and prevention of disease is in its infancy. The Naturopathic Medical Research Agenda project (Standish et al., 2006) prioritises research into naturopathy's role in *"... conditions with the highest burden of illness" and "...existing and emerging public health significance"*, suggesting that funding and resources need to be directed towards health promotion and disease prevention. The perception of New Zealand naturopaths and herbal medicine practitioners of their contribution towards New Zealand's health goals indicates that funding and resources could be well spent in such research.

5.6 Conclusion

Naturopaths and herbal medicine practitioners are popular with clients in New Zealand, and they appear to desire a closer and more integrated relationship with the conventional medical profession and public health care system. It is important that practitioners across both conventional and naturopaths and herbal medicine practitioners practice develop an understanding of why their patients are utilising both types of health care. Further research is needed to provide rich in-depth exploration of naturopathic and herbal medicine practitioners and their relationship with patients, conventional providers, and the provision of publicly funded health care in New Zealand.

Chapter 6 The characteristics, experiences and perceptions of homeopaths in New Zealand: results from a national survey of practitioners

6.1 Chapter introduction

6.1.1 Rationale for this analysis within the broader research project

This chapter furthers the aim of this thesis, which is to investigate the perceptions and practices of CM in New Zealand (see chapter 1, section 1.2.1). Whilst chapter 5 presented results from the survey for naturopaths and medical herbalists, this chapter expands the results into the CM discipline of homeopathy. Of note is the information that the results presented here are the outcomes of the first empirical investigation of homeopaths conducted in New Zealand.

Homeopathy has been shown to have a long history in New Zealand (see chapter 3), but there has been no real exploration of how homeopaths practice and their views on important factors that may affect their professional careers in New Zealand.

The chapter begins with a brief introduction into homeopathy in New Zealand, before presenting the findings for homeopaths' responses to the survey questions. The research objectives are fulfilled (in part) by the results presented in this chapter, answering the range of this thesis' research questions as they pertain to homeopaths.

The responses of the homeopath respondents are presented in this chapter, with some consolidation of the outcomes of the research analysis to ensure greater definition of the responses and clarity of the survey outcome data. Whilst the homeopaths responses to the questions contained in the core domains of the survey are shown here, further results are presented in chapter 8. This chapter and the additional results presented in chapter 8 allow for a comprehensive picture of the characteristics, perceptions and practices of New Zealand homeopaths. A brief discussion and conclusion follow to complete the chapter.

6.1.2 Publication results

The results contained within this chapter have been published as

Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2017). The characteristics, experiences and perceptions of homeopaths in New Zealand: results from a national survey of practitioners. *Homeopathy*, *106*(1), 11-17.

A copy of the manuscript is found in appendix 7

6.1 Introduction

6.1.1 Homeopathy in New Zealand

Despite intense ongoing debate about its efficacy and legitimacy for practice (Holt et al., 2011), the popularity of homeopathy amongst patients in New Zealand (Evans et al., 2008; Holt & Gilbey, 2009a) highlights the importance of empirically investigating these practitioners and their role within the wider health system (Whitmarsh, 2013).

In the 2006 New Zealand census (NZ Statistics, 2007), 102 people identified their occupation as a homeopath. In the 2013 census (NZ Statistics, 2015) this figure reduced to 78, representing only 2% of all CM practitioners in New Zealand. The New Zealand Health Survey 2006/2007 (Ministry of Health, 2008) reports that one in five people consulted a homeopath or naturopath in the previous twelve months. Data from general practice patients reveal that homeopathy is both popular and, in the view of patients, effective. (Holt & Gilbey, 2009a) A survey on CM use in a regional New Zealand cancer centre (n=97) reports 9% patients utilising homeopathy (Chrystal et al., 2003).

6.1.2 Practices and perceptions of homeopaths internationally

In Australia there is a homeopathy registration board, with no statutory status, having independence from individual homeopathic associations and administering federal government competency standards.(Dixon, 2008) The Australian 2006 census showed that 8.4% of CM practitioners identified themselves as homeopaths (total CM practitioners =19,401) (Leach, 2013). In 2007, 6% of the Australian population used homeopathic medicine, and, of those, 48% consulted with a homeopath(Xue et al., 2007a). A systematic review of 20 surveys internationally (12 countries) has identified that 1.5% of populations in those countries utilise homeopathy (Cooper et al., 2013). In several countries in Europe (Cooper et al., 2013) and in South Africa ("Allied Health Professions Act 1982," 1982), Canada (Ontario) (College of Homeopaths of Ontario, 2016), Ghana, Mauritius, Swaziland,

Brazil, Chile, Columbia, Costa Rica, Cuba, Ecuador, Mexico, India, Pakistan and Sri Lanka homeopathy has statutory registration. To date, there has been little published data on the characteristics of homeopaths internationally and none in New Zealand. To help address this gap, this paper provides the first examination of the characteristics, practices and perceptions of homeopaths in New Zealand.

6.2 Method

CM practitioners were invited to complete a sixty-five question, nationwide, on-line questionnaire examining aspects of practice. The questionnaire was developed specifically for this purpose and tested for consistency and clarity with 10 practitioners. This paper reports on findings for homeopathic practice only.

Ethics approval was granted by the New Zealand Ministry of Health National Ethics Advisory Northern A committee (Health and Disability Commission, 2016) and, for study purposes in Australia, the Human Research Ethics Committee, University of Technology Sydney, Australia.

6.2.1 National Sample of complementary medicine practitioners

The survey employed a convenience sampling method to recruit participants, using the two main registering bodies for CM practitioners in New Zealand. Similar sampling methods have been utilised in other surveys of CM practitioners internationally. (Boon, Cherkin, et al., 2004b; Braun et al., 2013b; Casey et al., 2008b) The questionnaire was distributed to 1067 CM practitioners, of which 100 were homeopaths. Affiliated organisations were allotted a specific range of codes to distribute to members (avoiding duplicate responses and ensuring anonymity) and invited to advise members to participate. Homeopaths were recruited through the New Zealand Council of Homeopaths, a body affiliated to the New Zealand Natural Health Council.

6.2.2 Survey Measures

Age, gender, ethnicity, and practice location were included in the demographic data. Average caseloads, professional experience years, highest level of qualification and attitudes to research formed the basis of exploring practitioner characteristics. Integrative medicine and practices were surveyed through questions on attitudes to integration, referral statistics (to and from conventional practices to homeopaths) and methods of referral. Questions on attitudes towards registration (statutory and voluntary) and funding for practice (both Government subsidies and medical insurance) were included.

6.2.3 Analysis

The data were initially imported into STATA® software and descriptive analyses conducted using means and standard deviations or frequencies and percentages where applicable. A rank-sum test was used to test association between categorical and binary variables and a chi-square test or Fisher's exact test was used to test the association between two categorical variables, where appropriate. A p-value of <0.05 was set to indicate statistical significance.

6.3 Results

Of the 176 homeopaths invited, 57 responded (a 32% response rate). The overall response rate for the survey (for respondents over all modalities) was 31%. The majority of homeopaths were female (93%). Twelve percent were under 45 years and 20% over 55 years. (See Table 1 for participant demographics and educational qualifications.)

6.3.1 Practice Characteristics

Most homeopaths (66%) were in part-time practice with mean clinical consultation hours per week being 14 (SD=9.2) and clinic management hours being 5 (SD=6.7). Mean years of experience in practice were 12.6 (SD=7.8). Mean caseloads per month were 25 (SD=29), with mean consultation lengths being: 94 minutes (SD=25) for initial consultations and 47 minutes (SD=11) for follow-up consultations.

Modalities (other than homeopathy) that were practised by the participant homeopaths were: nutritional counselling (12.28%); therapeutic massage (10.53%); nutritional supplementation (7.02%); aromatherapy (5.26%) herbal medicine (3.51%); yoga therapy (1.75%); traditional Chinese medicine (1.75%); naturopathy (1.75%) and neurolinguistic programming (1.75%).

Table 6.1: Demographics of homeopathic respondents to this thesis survey

Factors		
Age (n=56)	**Categorical Range**	**Frequency (%)**
	20 to 44	7 (12)
	45-54	30 (54)
	55-64	11 (20)
	65 +	8 (14)
Gender (n=54)		**Frequency (%)**
	Female	50 (93)
	Male	4 (7)
Homeopathic Qualification (n=55)	**Qualification level**	**Frequency (%)**
	Certificate or Diploma	47 (85)
	Undergraduate degree or higher	8 (15)
Highest Qualification Medical Science (n= 43)	**Qualification level**	**Frequency (%)**
	Certificate or Diploma	16 (37)
	Undergraduate degree or higher	27 (63)

6.3.2 Research

The findings show that 90% (i.e., 46 out of 51 participants who responded to this question) of the homeopaths perceived that research provided scientific evidence for validating practice, while 88% (i.e., 46 out of 52 participants who responded to this question) of the homeopaths perceived research as having an impact on their practice (Table 6.2).

There was an association between those practitioners who considered research to have an impact on their practice and those who considered themselves to possess sufficient skills to

interpret research (p=0.038) (Table 6.2). Thirty-three percent perceived that they had the skill to conduct research and 48% perceived that they had the skills to interpret research (Table 6.2).

Ninety-four percent reported that they remained updated with research findings (at least partially). The homeopaths report that they determined outcomes of treatment through several methods. Most (92%) homeopaths utilise client reported symptom change, while 92% employ quantifiable measures. 43% use medical tests (data not shown).

Table 6.2: The association between homeopathic practitioner characteristics and aspects of research

Practitioner and Practice-Related Characteristics	Using Research for Validating Practice			Research Impact on Practice		
	Useful (n=46) Mean (SD)	Not Useful (n=5) Mean (SD)	p-value	High/Moderate (n=46) Mean (SD)	Low (n=6) Mean (SD)	p-value
Years of Experience	13.2 (7.7)	9.0 (7.5)	0.240	13.1 (7.6)	11.5 (3.7)	0.600
Hours Spent on CAM-Related Training	1.5 (1.1)	1.9 (1.6)	0.403	2.3 (2.1)	1.0 (0.0)	0.141
Hours spent in practice	14.2 (9.5)	11.4 (8.5)	0.632	14.3 (9.6)	8.8 (7.5)	0.213
Average Case-Load Per Month (all)	25.5 (29.7)	26.8 (29.1)	0.813	26.8 (30.4)	15.6 (17.1)	0.303
	%	%		%	%	
Age **20-44**	10.4	20.0	0.520	11.7	0.0	0.452
45+	89.6	80.0		76.4	11.7	
Education						
Diploma	52.8	60.0	<0.001	54.3	60.0	0.509
Under-graduate & Post-graduate	100.0	0.0		25.7	40.0	
Sufficient Skills to Conduct Research						
Yes	34.9	20.0	0.504	37.5	16.7	0.318
No	65.1	80.0		62.5	83.3	
Sufficient Skills to Interpret Research						
Yes	51.1	20.0	0.186	51.1	0.0	0.038
No	48.9	80.0		48.9	100.0	

6.3.3 Regulation and Funding

The majority of homeopaths in the study are in favour of registration of their profession (87% of 47 respondents), with 59% of those favouring statutory registration (Table 6.3). A statistically significant association was identified between attitudes to registration and practitioner age (p=0.027), with older homeopaths being more in favour of registration (Table 6.3).

Table 6.3: The association between homeopathic practitioner characteristics and aspects of regulation and funding

Practitioner Characteristics		**In Favour of Registration**			**In Favour of Combined Government and Private Funding**		
		Yes (n=41) Mean (SD)	**No (n=6) Mean (SD)**	**p-value**	**Yes (n=40) Mean (SD)**	**No (n=11) Mean (SD)**	**p-value**
Years of Experience		12.6 (7.7)	15.3 (4.3)	0.244	13.8 (7.9)	8.9 (5.5)	0.059
		%	**%**		%	%	
Age	20-44	7.3	40	0.027	10.3	9.1	0.909
	>44	92.7	60		89.7	90.9	
Education							
Diploma		69.2	60.0	0.199	60.9	50.0	0.099
Under-graduate & Post-graduate		87.8	12.2		39.1	27.8	

6.3.4 Integrative Practice

The majority of homeopaths (68%) agreed that CM practitioners should integrate with conventional medical care, with 74% favouring integration with general practitioners (GPs).

Reported mean referrals per annum from homeopaths to specific conventional health care providers were as follows: GPs (57 referrals); midwives (30 referrals); specialists (17 referrals); physiotherapists (15 referrals); clinical psychologists (11 referrals); dietitians (9 referrals) and nurses (7 referrals) (data not shown.) There was a statistically significant

association between average patient caseload per month and referrals to a GP (p=0.012) (see Table 6.4).

Table 6.4: The association between practitioner characteristics and referrals made between Homeopaths and GPs

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a GP			Annual Number of Referrals Received From a GP		
		0-5 (n=20) Mean (SD)	6 or more (n=16) Mean (SD)	p-value	0-5 (n=11)	6 or more (n=6)	p-value
Years of Experience		11.5 (8.2)	16.1 (4.5)	0.059	14.2 (4.1)	17.8 (5.9)	0.190
Average Caseload Per Month (all)		18.4 (15.9)	45.5 (32.6)	0.012	24.2 (22.8)	66.8 (57.8)	0.131
		%	%		%	%	
Age	20-44	15.8	12.5	0.782	18.2	16.7	0.938
	>44	84.2	87.5		81.8	83.3	
Education							
Diploma		86.7	54.5	0.068	50.0	20.0	0.303
Under-graduate		13.3	45.5		50.0	80.0	

Table 6.5: The association between practitioner characteristics and referrals made between homeopathic practitioners and Midwives

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Midwife			Annual Number of Referrals Received From a Midwife		
		0-5 (n=11) Mean (SD)	6 or more (n=7) Mean (SD)	p-value	0-5 (n=12) Mean (SD)	6 or more (n=9) Mean (SD)	p-value
Years of Experience		12.9 (5.7)	15.3 (7.6)	0.433	14.4 (8.5)	15.0 (7.1)	0.696
Average Caseload Per Month (all)		17.0 (8.3)	65.7(60.2)	0.191	13.8 (8.2)	60.0 (49.2)	0.009
		%	%		%	%	
Age	20-44	0.0	14.3	0.218	16.7	11.1	0.719
	>44	100.0	85.7		83.3	88.9	
Education							
Diploma		75.0	50.0	0.334	75.0	42.9	0.205
Under-graduate		25.0	50.0		25.0	57.1	

Homeopaths reported referring to conventional care for the following reasons: conditions outside their scope of practice (79%); recognition of early warning signs requiring further investigation (77%); medical diagnosis (72%); conditions more suited to other treatments beyond homeopathy (63%) and sixty-two percent conditions too severe for homeopathic treatment. Homeopaths used the following methods for referral to conventional care providers: word-of-mouth (65%); referral letter (23%); telephone (12%) and email (9%).

Mean referrals from conventional care providers per annum were: midwives (37); GPs (17); nurses (9); physiotherapists (6); clinical psychologists (5); specialists (2) and dietitians (2). There was a statistically significant association between referrals from midwives to homeopaths and homeopaths' average caseloads per month ($p = 0.009$) (see Table 6.5).

The following referral methods from conventional medical care were reported by homeopaths: word-of-mouth (58%); telephone (12%); referral letter (7%) and email (2%).

Homeopaths were surveyed on the usefulness of information that could be gained through access to medical records. These responses were broken down to the following: diagnostic tests conducted (67%); immunisation history (67%); medical prescription (67%); medical history (64%); surgical history (63%) and medical diagnosis (61%).

6.3.5 Contribution to National Health Objectives

Homeopaths self-assessed their contribution to the New Zealand Ministry of Health published public health objectives. (Ministry of Health, 2000) The areas of contribution that homeopaths perceived they contributed most to were: improving nutrition (77%); increasing physical activity (75%); reducing smoking (63%); reducing obesity (61%); reducing drug and alcohol dependence (60%) and fifty-three percent reducing the incidence and the impact of cardiovascular disease.

6.4 Discussion

This is the first in-depth study of homeopathic practice in New Zealand and, as such, presents some useful findings, both for the practice of homeopathy and for the manner in which homeopathy relates to the wider health-care system in New Zealand (*College of Natural Health and Homeopathy*, 2016).

6.4.1 Integrative practices by homeopaths

The findings in the study that most homeopaths favour integration with conventional medical care are similar to the attitude of New Zealand naturopaths and herbalists in this thesis. The openness of New Zealand homeopaths to working in an integrative environment is mirrored in the United States, where two studies have found that homeopaths have been significantly included in integrative centres (Ruggie & Cohen, 2005).

The numbers of referrals from midwives to homeopaths found in this study reflect data from a number of international studies. A survey of Canadian and New Zealand midwives found that most midwives in New Zealand (50.7%) and Canada (40%) referred to homeopaths (Harding, 2009). Several other studies internationally report similar results. Studies conducted in Australia (Gaffney & Smith, 2004), Germany (Münstedt et al., 2009), Israel (Shuval et al., 2002) and the United Kingdom (Baxter & Perrin, 2006) all found considerable referrals occur between homeopaths and midwives or obstetric practitioners, often at the request of pregnant women as was evident in a study of referrals between GPs and homeopaths in West Bengal, India (Saha et al., 2015).

Integration of homeopathy into mainstream medicine in Europe shows a mixed picture. A study in the Netherlands found that, while GPs' attitudes to integration of mind-body therapies was seen as 'complementary', homeopathy was considered 'alternative', which

could be a barrier to integration (Jong et al., 2011). In Europe 40% of patients are treated with homeopathy in integrative oncology centres (Rossi et al., 2016).

Integration of homeopathy into mainstream health care may seem fraught with difficulty, given the seeming incompatibility between the fundamental tenets of the systems (Holt et al., 2011; Schmidt, 2013), but it appears from the findings in this thesis and other evidence that types of integration, especially referrals between conventional practitioners and homeopaths, exist and appear to be continuing to occur. Certainly, statutory regulation of homeopaths in New Zealand, such as is the case with their counterparts in South Africa ("Allied Health Professions Act 1982," 1982), may benefit the integration of homeopathy into mainstream health care, as it has for osteopaths and chiropractors in Australia (Orrock, 2008).

6.4.2 Registration and Regulation

While self-regulation for homeopaths in New Zealand exists and appears to be successful in maintaining educational and practice standards (*The New Zealand Council of Homeopaths*, 2014), many homeopaths in the study were in favour of statutory registration. Raising educational standards (undergraduate and post-graduate levels), developing research capacity and other programmes to increase the cohesiveness of the profession (Kelner et al., 2006) were considered important to statutory regulation by homeopaths in Ontario (Mathur & Gupta, 2016). Opposition to statutory registration in New Zealand from conventional practitioners is reflected in several other countries, including Canada (Parker, 2013), United Kingdom (Stoneman et al., 2013), Australia and India (Freckelton, 2012). Italy has made some steps in regulating homeopathy by allowing regional health authorities to support some integrative clinics through the public health system, including homeopathic clinics (Rossi et al., 2015).

6.4.3 Research

The value that New Zealand homeopaths place on research is seemingly contradictory when homeopathy's evidence-base faces sustained criticism from sectors of medicine (Freckelton, 2012; Gaffney & Smith, 2004; Goldacre, 2007; *NHMRC Information Paper: Evidence on the effectiveness of homeopathy for treating health conditions*, 2015) The findings in this study indicate that homeopaths in New Zealand could be receptive to calls for them to become more engaged with research (Breach et al., 2003; Mundle et al., 2014). Considerations of clinical meaning and scientific explanations (outside those generated by randomised controlled trials) could comprise the types of scientific papers that homeopaths access and utilise in practice (Münstedt et al., 2009) and could be the subject of a useful study. A minority of New Zealand homeopaths gain their information for practice from peer-reviewed journal papers, consistent with a study in Germany that found that most homeopaths utilise books and seminars for continuing homeopathic professional education (Holmes, 2013). A Canadian study of homeopaths reported that research has not traditionally been part of the homeopathic education curriculum, resulting in skills for interpreting or conducting research amongst homeopaths being limited (Kelner et al., 2006).

Whilst New Zealand homeopaths perceive research as having value and impact in their practice, reliance on more traditional homeopathic methods of assessing client change as a result of treatment, such as client reported symptom change, appear to be favoured. This is reflected in findings in other studies.(Cant & Sharma, 1996; Kalder et al., 2011; Levy et al., 2010; Münstedt et al., 2009), although in Britain there have been some moves towards homeopaths using measurable patient reported outcomes (Thompson et al., 2008).

6.4.4 Contribution to National Health Objectives

Homeopaths in the study reported their self-assessed contribution to national health objectives are primarily focused on nutrition and reducing obesity, along with reducing

smoking, alcohol and drug dependence. It is postulated that homeopathy could be effective for treating the mental/emotional aspects of obesity.(Feingold, 2006) A systematic review of the effectiveness of CM in obesity included two studies using homeopathy; one that showed no significant effect and one showing a significant effect (Pittler & Ernst, 2005). A comprehensive database search failed to find any evidence for the efficacy of homeopathy in substance addiction.

6.5 Limitations of the Study

The questionnaire response rate of 31% is possibly a result of its electronic nature (Evans, 2000), although homeopaths' response rate was marginally better (32%). Workforce studies of this kind typically have similar response rates (Smith et al., 2005c). This probably has led to several datasets within the study having a lack of statistically significant associations.

6.6 Conclusion

This study is the first survey of homeopaths undertaken in New Zealand. The comprehensive nature of this survey provides valuable information for homeopaths, homeopathic practitioner organisations and educators in New Zealand. It also provides information that assists other health professionals to gain an understanding of how homeopaths practice, and their perception of important issues such as integration and registration. There is a need for more in-depth research into the nature of homeopaths' attitudes to research and registration, and homeopaths' integration and referral practices, and how these might relate to homeopathic education in New Zealand. Such investigation is required to provide a greater understanding of the current and potential role of homeopaths in delivery of health care in New Zealand.

Chapter 7 The characteristics, experiences and perceptions of massage therapists in New Zealand: results from a national survey of practitioners

7.1 Chapter introduction

7.1.1 Rationale for this analysis within the broader research project

This chapter furthers aims of the thesis to investigate the perceptions and practices of CM in New Zealand (see chapter 1, section 1.2.1), by presenting the findings of the survey for massage therapists in New Zealand. Whilst one exploration of the New Zealand massage therapists preceded this study, this thesis provides a broad depiction of New Zealand massage therapists across a range of issues, providing a comprehensive picture of the massage therapists views and practices in relation to the research questions articulated in chapter 1.

A brief introduction allows for a contextual background into massage therapy in New Zealand, with reference (for comparison) to massage therapy internationally. A presentation of results with statistical analysis of several key datasets follows. As in chapters 5 and 6, not all data obtained by the survey appears in this chapter. Additional results and analysis from the survey, for massage therapists, are presented in chapter 8 The chapter concludes with a discussion section and a short conclusion.

7.1.2 Publication results

The results contained within this chapter have been published as

Cottingham, P., Adams, J., Vempati, R., Dunn, J., & Sibbritt, D. (2018). The Characteristics, Experiences and Perceptions of Registered Massage Therapists in New Zealand: Results from a National Survey of Practitioners. International journal of therapeutic massage & bodywork, 11(2), 11-24.

A copy of the manuscript is found in appendix 8

7.2 Introduction

Massage therapy (massage therapist) is one of the most popular forms of complementary and integrative medicine (CIM) with the general public (Gerasimidis et al., 2008; Grant et al., 2012; Harris et al., 2014; Hawk et al., 2012b; McLaughlin et al., 2012; Sirois & Purc-Stephenson, 2008; Xue et al., 2007b). The perceived health benefits for massage therapist users include: emotional well-being and reduced physical limitation (Munk & Zanjani, 2011); pain reduction (Madore & Kahn, 2008); stress reduction; enhancing sleep; injury repair and enhancing recovery from injury (Liu et al., 2015).

A number of studies of massage therapists have been conducted worldwide, with some focusing on the therapeutic encounter and how massage therapists approach the treatment of patients and conditions (Porcino et al., 2013; Sherman et al., 2005) and others investigating massage therapists' perceptions and practice characteristics (Porcino et al., 2011; Smith et al., 2011a; Wardle et al., 2015).

The practice of massage therapist in New Zealand is regulated, under a voluntary registration system by Massage New Zealand, the only professional body in New Zealand that regulates massage therapists at the time of the survey reported here Massage New Zealand had 400 members (Massage New Zealand, 2016).

To date, there has only been one New Zealand study of the practices of massage therapists, investigating: massage therapists' profiles; a range of practice characteristics and referral patterns; modalities used; conditions treated and a selection of professional issues. This work, conducted in 2008, provides early descriptive data regarding massage therapists' practice across New Zealand (Smith et al., 2011a).

A 2013 study has shown that in 2006 Australian massage therapists comprised the largest number of CIM providers per head of population (1:2424). Comparatively, in 2006, New Zealand had one massage therapist for every 3167 people (Leach, 2013).

Massage therapists' attitudes and perceptions of the value of regulation and registration have been investigated in a number of studies in New Zealand (Massage NZ, 2018; Smith, 2015b) Australia (Cohen et al., 2005; Hughes, 2013) and Canada (Shroff & Sahota, 2013). Findings from these studies illustrate the importance of understanding practitioner perceptions and practices to inform the emergent professions of CIM, such as massage therapist (Meier & Rogers, 2006; Winnick, 2005), an issue highlighted by the New Zealand Ministerial Advisory Committee in its identification of the need for "quality, unbiased information on the safety and efficacy of CM modalities, and for further work to be done to identify and address consumers' needs for information about the practice of CIM in New Zealand".(Koopman-Boyden et al., 2004)

Inspired by the other international studies and the Ministerial Advisory Committee's recommendation, researchers from two colleges delivering massage education developed a survey to collect data on CIM practitioners' perceptions and practices in New Zealand. This paper reports findings from this survey with regards to massage therapists' characteristics, experiences, and perceptions in New Zealand.

A comprehensive literature search identified only one paper (Smith et al., 2011a) on CIM practitioner attitudes and perspectives in New Zealand. The importance of understanding evidence for CIM practice (Leach & Gillham, 2011) led to the development of a survey investigating perceptions and practices among CIM practitioners. This paper reports findings from this survey with regards to massage therapists' characteristics, experiences and

perceptions in New Zealand and makes comparison with similar studies in New Zealand and internationally.

7.3 Method

A largely quantitative on-line survey was administered to a range of practitioners (including massage therapists, naturopaths, herbalists, and homeopaths) in New Zealand, examining their characteristics, perceptions and experiences relating to a range of key practice-related issues, such as use of evidence in massage therapist practices and integration with other healthcare practitioners. Using an on-line platform (via survey monkey) the survey included seven domains: demographic practitioner data; practice and referral characteristics; academic qualifications; perceptions and experiences regarding research, integration, registration and alignment to the New Zealand health strategy (Ministry of Health, 2000).

7.3.1 Sample

A convenience sampling approach was utilised. massage therapists were recruited through Massage New Zealand, the New Zealand professional body for massage therapists with a membership (at the time of the survey) of 400. (At the time of the survey there were approximately 1400 massage therapists in New Zealand (Figure.NZ, 2013). However, Massage New Zealand is the only organisation that registers massage therapists in New Zealand, therefore they were selected for collection of data. A similar approach has been employed by another survey of massage therapists in New Zealand (Smith et al., 2011b). The total dissemination of the survey was to 1,067 CIM practitioners. This paper reports on the data obtained from massage therapists only.

7.3.2 Data collection

Ethics approval was granted by the New Zealand Ministry of Health National Ethics Advisory Northern A committee (Health and Disability Commission, 2016) and, for ongoing

analysis, the ethics committee of the University of Technology Sydney, Australia (UTS Human Research Ethics Committees, 2021). Informed consent was implied by participation as per the New Zealand national ethics committee guidelines (Health and Disability Commission, 2016). Participants were invited to complete the survey, through letters that were sent to prospective participants by their respective associations. The raw data was then downloaded by the survey team in spreadsheets.

7.3.3 Statistical analyses

Descriptive analysis was conducted (using Excel software) and included frequencies, percentages, means and standard deviations, where applicable. Bivariate associations between categorical variables used a chi-square test, with a student's t-test being applied to test mean differences across categorical variables. Statistical analyses were conducted using Stata® software. Statistical significance was indicated by a p-value of <0.05.

7.4 Results

One hundred and fifteen massage therapists responded to the questionnaire (representing 29% of Massage New Zealand membership at the time of the survey). Respondents consisted of 86% females and 14% males, which closely related to the gender make up of Massage New Zealand membership at the time of the survey (80% female, 20% male). Forty-one percent of respondents were aged less than 45, with 42% aged between 45 and 54 and 18% aged 55 or older. The base level of qualifications for majority of massage therapists (64%) was diploma or advanced diploma. Some respondents did hold higher qualifications, with 9% holding a post-graduate degree.

7.4.1 Practice characteristics

Massage therapists' practices were located mostly in cities (58%), with 31% in towns and 11% rurally. Fifty percent of massage therapists utilised professional rooms, with 32%

utilising their own homes and 10% consulting via mobile practices, either going to the client's workplace or homes. Most massage therapists practised part-time (61%), with 36% full-time and 3% practising occasionally. Mean practitioner hours per week were 18.6 (n=106, SD=10.6), with 47% practising over 20 hours per week. Massage therapy consultations were an average duration of 68 minutes for the initial visit and 58 minutes for follow-up consultations. Average total caseloads per month were 45.6 (SD=37.0), with median caseloads per month being thirty-nine comprising 11.4 (SD=16.1) new clients per month and 35.3 (SD=28.8) follow-up clients per month. On average 4.7 hours per week (n=37, SD=3.7) were spent in training (massage therapy professional development). Most other mean massage therapy related hours per week were spent in teaching faculty (n=18, mean 10.5, SD 9.1) followed by practice-related tasks (mean=4.7; SD=7.0).

Modalities (other than massage therapy) that were practised by the participant massage therapists were: aromatherapy (17.4%); nutritional supplementation (6.1%); herbal medicine (3.5%); nutritional counselling (2.6%); hypnotherapy (2.6%); homeopathy (1.7%); naturopathy (1.7%); naturopathy (1.7%); neurolinguistic programming (1.7%) and traditional Chinese medicine (1.0%) and yoga therapy (1.0%).

Table 7.1: The association between massage practitioner characteristics and aspects of research

Practitioner and Practice-Related Characteristics		Using Research for Validating Practice			Research Impact on Practice		
		Useful (n=98) Mean (SD)	Not Useful (n=5) Mean (SD)	p-value	High/Moderate (n=91)	Low (n=12)	p-value
Years of Experience		8.8 (6.6)	10.6 (8.0)	0.556	8.9 (6.6)	8.6 (7.1)	0.853
Hours Spent on CAM-Related Training		4.97 (8.4)	2 (-)	-	5.2 (8.7)	1.3 (0.6)	0.448
Hours Spent on Administrative Tasks		5.2 (4.5)	3.3 (1.5)	0.485	5.1 (4.5)	4.7 (3.8)	0.816
Average Caseload Per Month (all)		45.3 (36.2)	89.0 (34.0)	0.009	47.0 (37.4)	53.8 (37.1)	0.642
		%	%		%	%	
Age	**22-44**	40.8	20.0	0.354	41.8	25.0	0.265
	>44	59.2	80.0		58.2	75.0	
Education	Certificate/Diploma	65.3	25.0	0.004	60.9	80.0	0.363
	Under-graduate	5.3	50.0		7.2	10.0	
	Post-graduate	29.3	25.0		31.9	10.0	
Sufficient Skills to Conduct Research	Yes	17.6	25.0	0. 705	17.4	22.2	0.722
	No	82.4	75.0		82.6	77.8	
Sufficient Skills to Interpret Research	Yes	71.2	33.3	0.161	69.0	80.0	0.605
	No	28.8	66.7		31.0	20.0	

7.4.2 Research

The majority of massage therapists (95%) perceived research as having value for their practice, with 88% stating that it impacts (highly or moderately) on their practice. Table 1 depicts the associations between practitioner characteristics and research value and research utilisation. A significant inverse association (p=0.009) was found between mean caseload and the value placed on research. Those practitioners who considered research as having value for their practice spent an average of 17.9 (SD=10.3) hours in clinical practice, compared to the 28.8 (SD=7.6) hours spent in clinical practice by those massage therapists who perceived research as having no value for their practice. Another significant association was found between academic qualification and value placed on research (p=0.004), with those who hold a certificate or diploma more likely to value research. No significant associations were found

between research impact (on massage therapists' practice) and years of experience, practice hours per week, training hours per week or average caseload per month.

While 46% of respondents reported having the skills to interpret research within their clinical environment, only 15% reported having the skills to conduct research. Sixty-seven per cent of the massage therapists reported that they did not keep up to date with research findings. Evidence from research, was sourced by the massage therapists, from: association journals (64%); web articles (54%); health specific magazines (45%); news articles (45%); on-line scientific journals (34%); association meetings (21%); peer reviewed journals (21%); newsletter from manufacturers (17%) and international conferences (12%). The reasons given by massage therapists for not having skills to interpret research were: insufficient time (52%); insufficient skills in reading research papers (20%); financial restraints (7%); no access to databases (7%) and the view that it is not important to massage therapists' practices (7%).

Table 7.2: The association between massage practitioner characteristics and aspects of regulation and funding

Practitioner Characteristics		In Favour of Registration			In Favour of Combined Government and Private Funding		
		Yes (n=88) Mean (SD)	No (n=9) Mean (SD)	p-value	Yes (n=66)	No (n=33)	p-value
Years of Experience		8.6 (6.4)	12.2 (8.9)	0.142	8.0(6.5)	10.1 (6.6)	0.163
		%	%		%	%	
Age	**22-44**	37.5	55.6	0.291	42.4	36.4	0.562
	>44	62.5	44.4		57.6	63.6	
Education							
Certificate/Diploma		65.7	71.4	0.755	62.8	68.0	0.795
Under-graduate		7.4	0.0		7.8	4.8	
Post-graduate		26.9	28.6		29.4	28.0	

Table 7.3: The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and GPs

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a GP			Annual Number of Referrals Received From a GP		
		<6 (n=35) Mean (SD)	6 or more (n=45) Mean (SD)	p-value	<6 (n=37)	6 or more (n=23)	p-value
Years of Experience		12.1 (10.3)	10.1 (8.2)	0.346	2.9 (1.6)	3.3 (1.5)	0.275
Average Caseload Per Month (all)		23.8 (22.6)	39.4 (33.8)	0.025	33.9 (24.4)	41.6 (36.0)	0.298
		%	%		%	%	
Age	**22-44**	37.1	40.9	0.733	25.0	26.1	0.925
	>44	62.9	59.1		75.0	73.9	
Education							
Diploma		50.0	42.9	0.130	34.5	53.3	0.261
Under-graduate		39.3	25.7		44.8	20.0	
Post-graduate		10.7	31.4		20.7	26.7	

Table 7.4: The association between practitioner characteristics and referrals made from naturopathic and herbal medicine practitioners to specialists

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Specialist		
		<6 (n=30) Mean (SD)	6 or more (n=9) Mean (SD)	p-value
Years of Experience		11.5 (9.4)	8.5 (7.1)	0.413
Average Caseload Per Month (all)		26.6 (19.0)	49.0 (36.1)	0.020
		%	%	
Age	**22-44**	40.0	37.5	0.898
	>44	60.0	62.5	
Education				
	Diploma	45.4	57.1	0.532
	Under-graduate	36.4	14.3	
	Post-graduate	18.2	28.6	

Table 7.5: The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and physiotherapists

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Physiotherapist			Annual Number of Referrals Received From a Physiotherapist		
		<6 (n=23) Mean (SD)	6 or more (n=6) Mean (SD)	p-value	<6 (n=12)	6 or more (n=6)	p-value
Years of Experience		12.0 (10.2)	5.5 (6.8)	0.160	2.8 (1.8)	3.3 (1.4)	0.559
Average Caseload Per Month (all)		38.7 (29.4)	24.7 (15.1)	0.275	43.1 (23.0)	31.0 (44.9)	0.455
		%	%		%	%	
Age	**22-44**	34.8	50.0	0.494	50.0	16.7	0.171
	>44	65.2	50.0		50.0	83.3	
Education							
	Diploma	50.0	25.0	0.450	42.9	33.3	0.961
	Under-graduate	43.8	50.0		28.6	33.3	
	Post-graduate	6.2	25.0		28.6	33.4	

Table 7.6: The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Midwives

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Midwife			Annual Number of Referrals Received From a Midwife		
		<6 (n=22) Mean (SD)	6 or more (n=16) Mean (SD)	p-value	<6 (n=20)	6 or more (n=17)	p-value
Years of Experience		12.8 (10.2)	9.8 (7.4)	0.346	2.7 (1.9)	2.9 (1.5)	0.685
Average Caseload Per Month (all)		35.1 (28.8)	36.3(30.7)	0.909	29.0 (27.1)	40.0 (27.4)	0.234
		%	%		%	%	
Age	**22-44**	29.2	56.3	0.087	30.0	41.2	0.478
	>44	70.8	43.7		70.0	58.8	
Education	Diploma	41.2	50.0	0.114	40.0	45.4	0.497
	Under-graduate	41.2	8.3		40.0	18.2	
	Post-graduate	17.6	41.7		20.0	36.4	

Table 7.7: The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Clinical Psychologists

Practitioner and Practice-Related Characteristics		Annual Number of Referrals Made to a Clinical Psychologist			Annual Number of Referrals Received From a Clinical Psychologist		
		<6 (n=26) Mean (SD)	6 or more (n=12) Mean (SD)	p-value	<6 (n=11)	6 or more (n=4)	p-value
Years of Experience		14.0 (2.2)	9.3 (7.9)	0.196	3.4 (1.9)	4.3 (0.5)	0.374
Average Caseload Per Month (all)		37.0 (26.2)	45.8 (29.1)	0.367	35.5 (21.3)	76.6 (54.8)	0.047
		%	%		%	%	
Age	**22-44**	23.1	54.6	0.062	27.3	50.0	0.409
	>44	76.9	45.4		72.7	50.0	
Education	Diploma	55.6	57.1	0.446	100.0	66.7	0.168
	Under-graduate	33.3	14.3		0.0	0.0	
	Post-graduate	11.1	28.6		0.0	33.3	

7.4.3 Regulation and funding

Ninety-three percent of massage therapists supported registration for massage therapy (n=97). Of the massage therapists who supported registration, 67% supported statutory registration, 31% supported voluntary registration, with 1% supporting other types (non-specified). No association was found between massage therapists' support for registration and practitioner age (p=0.291); level of academic qualification (p=0.755) or years of experience in massage therapist (p=0.142) (see table 2).

A combination of private (insurance) and government subsidies for funding massage therapists' practice was favoured by the massage therapists (67%) with only 3% of the respondents preferring government subsidies alone.

7.4.4 Integration

The majority of massage therapists were supportive of integrating their own clinical patient care with a range of conventional care practitioners (CCPs) including with GPs (81%); specialists (78%) and physiotherapists (81%). Eighty-three percent of the massage therapists surveyed currently referred patients to CCPs. Two percent of massage therapists' mean annual caseloads was referred to CCPs and 2% (of mean annual caseloads) were received from CCPs. The massage therapists' average number of referrals (per annum) of patients to CCPs were as follows: GPs (6.5); specialists (6.7); physiotherapists (8.1); midwives (11.7); nurses (13.5); dietitians (6.7) and clinical psychologists (8.5). A significant positive association was found between massage therapists' referral to GPs and massage therapists' average caseload per month (p=0.025) with those reporting smaller caseloads per annum being less likely to refer to a GP. No other significant associations were found between referrals to CCPs and massage therapists' characteristics, practices or perceptions (see tables 3 – 6). The main reasons for referral to CCPs by massage therapists were reported as: for conditions outside the massage therapists' scope of practice (83%); for medical diagnosis of

condition (68%); for conditions more suited to other treatments (67%); where warning signs indicate further investigation (63%); to gain clearance or rule out contraindication for CIM treatment (62%); for conditions too severe for the massage therapists to deal with (56%); and for conditions massage therapists training did not cover (53%). Seventy-four percent of referrals to CCPs were conducted through word of mouth, with 21% by referral letter; 20% by email and 15% by telephone.

Seventy-five percent of massage therapists reported receiving referral from CCPs. The average number of referrals received per annum by the massage therapists, from CCPs were: GPs (5.6); specialists (9.6); physiotherapists (8.4); midwives (8.9); nurses (13.3); dietitians (18.2) and clinical psychologists (12.6). Seventy percent of referrals from CCPs were conducted through word of mouth, with 14% by referral letter; 13% by telephone and 12% by email. No significant associations were found between referrals from CCPs and massage therapists characteristics, practices, or perceptions (see tables 3–6).

7.4.5 Contribution to national health objectives

The perceptions of massage therapists with regards to ways in which they contribute to New Zealand Ministry of Health published public health objectives (Ministry of Health, 2000) included: increasing physical activity (83%); improving nutrition (68%); reducing smoking (41%); reducing obesity (39%); reducing the incidence and the impact of cardiovascular disease (32%).

7.5 Discussion

Most massage therapists in the study were not in full-time practice, which suggests that massage therapists' practices may not be their sole source of income. This is similar to other studies in New Zealand and internationally. Whilst many of these previous studies may not be as nationally representative of the massage therapist profession examined, they provide

useful comparisons with the study findings. A small (n=66) postal survey of massage therapists in New Zealand (Smith et al., 2011a) found that 57.6% had massage therapy as a sole source of income. Similarly, an Australian study of 301 randomly selected massage therapists belonging to the Australian Association of Massage Therapists (19.5% of total membership) found that nearly half of massage therapists surveyed had fewer than 10 clients per week (n=141), and for only 55% (n=165), massage therapy was the sole source of income (Wardle et al., 2015). However, it must be noted that the Australian Association of Massage Therapists is not the only association representing massage therapists in Australia and members of Massage and Myotherapy Australia which is the largest association representing massage therapists across Australia were not sampled in this recent Australian study. A sub-group analysis of a small United States study of the characteristics of four CIM professions found that most massage therapists had between 10 and 17 hours of direct patient contact per week.(Sherman et al., 2005) Comparative modality analyses in the same study (massage therapists, acupuncturists, naturopaths and chiropractors) also found that massage therapists had fewer contact hours per week than the other two professions (Daniel C Cherkin et al., 2002). It would be informative to the massage therapy profession and massage therapy educators in New Zealand to examine more deeply the reasons why massage therapists appear to have fewer hours of contact with patients compared to other health professionals.

7.5.1 Research

The inverse correlation between massage therapists' perceptions of the value that research has for practice and massage therapists' caseload as found in the study, may be partly the result of the amount of time the practitioners have to read and apply research, with those in busier practices perhaps having less time to read published research findings. It is also possible that many massage therapists feel that individualisation of treatment leaves little space for applying researched information (Porcino et al., 2011; Shroff & Sahota, 2013).

Nevertheless, there are implications of this lack of interest in research among massage therapists. One study in British Columbia identified that a lack of research had an impact on the acceptance of massage therapists' role in healthcare by other health professionals (Guzman, 2014). These findings are also reflected in a survey of massage therapists in Saskatchewan, where research was perceived by massage therapists as adding credibility to their profession. (Gowan-Moody et al., 2013) Further, Baskwill and Dore (2016) found that lack of access to sources of researched information is likely to be contributing to massage therapists understanding of the role of researched information in massage practice. Another Canadian study showed that there is still a perceived need for more research training in massage therapists' education (Kania-Richmond et al., 2015). Furthermore, in Canada, an investigation of the development of research understanding amongst massage therapist students (through the use of case studies) found that, alongside the growth of research into massage therapist and body work, competency requirements in massage therapists' research literacy (by the Canadian massage practice regulatory body) have also grown. This study concludes that the use of case studies in massage therapists' education is an important step in the process of developing research understanding among the ranks of the profession (Baskwill, 2013). In the United Kingdom, a qualitative study showed that development of EBP was linked with education (both formal and professional development) as well as access to database information (Stuttard, 2002).

While the massage therapists in the study viewed research as valuable and providing information that validated some of their practices, this was not reflected in their perception of its impact on practice. The lack of impact of research in massage therapists' practices was also found in a study of Australian massage therapists (Wardle et al., 2015), which indicated that massage therapists gain most of their researched information passively through continuing professional education (CPE), a finding that was not reflected in the study, which

found no association between the various forms of CPE massage therapists undertake and their perception of the value of research, or the impact of research on massage therapists' practice. However, the study did show a significant association between academic qualifications and the value placed on research, although there was still a perceived lack of guidance in research methods and development of protocols, indicating the need for more CPE in these areas. The Australian workforce study of massage therapists found that the majority of massage therapists surveyed regularly read research articles (Wardle et al., 2015), but the source of those articles is not identified, as it was in the study. The lack of evidence about the role of research within massage therapy practices indicates a potential role for massage therapy educators to educate massage therapy students in the importance of sourcing information from primary research in peer-reviewed journal articles in the development of an evidence-based practice. Another Australian study of massage therapists found that those reporting higher income levels from their massage practice were more likely to engage with research (Wardle et al., 2015). However, the authors conclude that neither massage therapists' income nor education were found to be the only determinants of engagement with research, and massage therapists may need to create collaborative networks with researchers and policy makers to enhance their practice.

A study of massage therapists' educators in the United States (Menard, 2014) found that research literacy was not a high competency desired for massage therapist educators' colleagues (48.1% for colleagues working in a clinical setting, and 38.9% for their own personal therapist). A contrasting study in the United States, found that some massage therapists have responded well to being involved in research studies (as participants), including randomised controlled trials (M. Perlman, MPH, Adam et al., 2015) and massage therapists are potentially well disposed to being involved in practitioner-generated research, such as case report studies (Moyer, 2011). There is certainly potential in collaboration

between massage therapy educators and researchers in New Zealand to create an agenda that allows massage therapists to develop into researchers, or at least active providers of interventions in research studies (Munk et al., 2014). Such an agenda could include explorations into: how the therapeutic relationship between massage therapists and their clients is facilitated in practice; the role and value of educational approaches in massage therapy in enhancing massage therapists skill and aptitudes in clinical practice settings and how to collect and utilise data within a massage therapy clinical practice.

7.5.2 Regulation and funding

Statutory registration was favoured by most massage therapists in the study (56% of total respondents). In New Zealand, Smith (2015) found mixed views on statutory regulation amongst New Zealand massage therapists, but concluded that it is an important step in professionalisation of massage therapists. Just over half (50.6%) of massage therapists in New Zealand surveyed by Massage New Zealand (2018) agreed that the association should work towards systematic review of massage therapists. as yet Massage New Zealand has not stated explicitly that it will pursue statutory registration (Massage NZ, 2014). The support for a combination and private funding for massage therapy found in the study may reflect the lack of funding support that massage therapists in New Zealand experience (Massage NZ, 2018).

In Australia there is a similar regulatory situation, with voluntary registers being established with a 50% positive response to the Australian Massage Therapy Association survey question about whether Australian massage therapists should be statutory registered and funded (Hughes, 2013).

A Canadian study (Shroff & Sahota, 2013) found that systematic review is perceived by massage therapists to be linked with evidence-based practice, good business practice and

education curricula that include these approaches. This study also found that massage therapists in Canada felt challenged through practising outside the publicly funded health system. Future studies of massage therapists in New Zealand could explore the massage therapists perspectives of how funding affects their ability to practise massage therapy successfully.

In Europe, massage therapy is regulated in 20 countries, with 16 of those having European Union registration, by far the greatest span of countries that recognise massage therapy. In several of the European countries massage therapy is also government funded (wholly or partially) (Weidenhammer et al., 2011).

These studies show that while systematic review remains a goal for massage therapists, there is limited progress towards such regulation worldwide, with only a few countries having systematic review (Smith et al., 2011a). Potentially regulation could assist with the integration of massage therapist into mainstream health care.

7.5.3 Integration

The study finding support massage therapists desire to be integrated with mainstream healthcare and show some slight progress in terms of referral between massage therapists and CCPs in New Zealand. Progress in integration of massage therapist with conventional care in New Zealand has been linked to the lack of research into massage therapist effectiveness (Smith et al., 2012). This may be the reason that the findings in the study indicate that, although massage therapists in New Zealand support integration of massage therapists with other CCPs, annual referrals to and from CCPs are not frequent. However, most massage therapists did refer patients and received referrals from CCPs. A previous New Zealand study found similar patterns of referral to and from CCPs in massage therapists' practices (Smith et al., 2011a). Meanwhile, an Australian massage therapy workforce study identified massage

therapists as receiving less than 10% of their average annual caseload from referral (Wardle et al., 2015). In Singapore, 86% of CIM practitioners (with massage therapists being the predominant modality studied – 50%), referred to CHC practitioners and 74% received referrals from CCPs. Unfortunately, annual referral numbers were not reported in this Singaporean study (Ang & Wilkinson, 2013). A United Kingdom study (Greenfell et al., 1998) found that 20% of GPs referred to massage therapists, but again, referral numbers were not reported. Another study in London found that, among CCPs, non-GPs were more likely to refer to massage therapists (van Haselen et al., 2004b), a result similar to that from the study, where only 7% of average annual referrals were from GPs. Although many international studies have investigated referral patterns and attitudes among CCPs and CIM practitioners, no data is available internationally on massage therapists' method of referral to CCPs, or how massage therapists receive referrals from CCPs. Given that the findings show that most referrals to CCPs occur informally (74% by word of mouth) this important information about integrative patient care seems to have been neglected by researchers, despite implications for patient safety and continuity of care. There is scope for more in-depth investigation of integrative practices between massage therapists and CCPs.

7.6 Limitations of the study

The convenience sampling employed in the study means that only those practitioners who were members of the voluntary register held by Massage New Zealand were recruited for participation. This will have excluded massage therapists who choose not be registered with Massage New Zealand, indicating that any conclusions arising from this study may only be reasonably applied to massage therapists registered with Massage New Zealand, or similar bodies internationally. Nevertheless, the response rate of 32% is not dissimilar to other health workforce studies of this kind (Smith et al., 2005), particularly those where data has been collected electronically. Another possible limitation of the study is that the information from

massage therapists is self-reported, leading to potential recall bias in the results, a comment made in other similar surveys of massage therapists (Gowan-Moody et al., 2013; Wardle et al., 2015).

7.7 Conclusion

There is an apparent integration of massage therapist in New Zealand, in terms of referrals and relationships with CCPs. However, research engagement may present an obstacle to further development of full integration of massage therapist with the mainstream New Zealand healthcare system.

Several key areas including massage therapists' attitudes and incorporation of researched information into practice, the need for statutory registration of massage therapists and how massage therapy could be integrated into mainstream healthcare require further investigation in order to contribute to a greater understanding of the role and nature of massage therapists' practice in the New Zealand healthcare system.

Chapter 8 Additional results

8.1 Introduction

This results chapter builds upon the previous chapters and creates context for some of the results that have been presented in chapters 5, 6 and 7. The chapter is structured around survey questions that inquired into the New Zealand CM practitioners' perceptions and practices within the broad areas of education, research, integration with other CM and CHC and alignment with New Zealand healthcare objectives and programmes. The chapter also contains a section related to CM practitioner practice characteristics (practice hours per week). A final question investigates the CM practitioners' views on important questions facing the future of CM practice in New Zealand.

8.2 Questions related to complementary medicine education

The CM practitioners were asked to respond to questions identifying gaps in their CM education and some challenges (that they may have faced post the completion of their qualification) in establishing their CM practices in the New Zealand environment. The questions included the challenges the CM practitioners faced in establishing a business, working with their peers and professional organisations and how well their education prepared to practice CM in New Zealand.

The CM practitioners were asked to rate their practitioner education. Results of "excellent" or "very good" were as follows: 62% of naturopaths/medical herbalists (n=102); 86% of homeopaths (n=57), and 95% of massage therapists (n=104).

Sixty-two percent of naturopaths and medical herbalists self-reported that there were gaps in their education, with 53.6% of homeopaths and 42% of massage therapists also reporting gaps. The gaps experienced by the CM practitioners included: business skills; clinical experience; some medical science knowledge (in pathophysiology and pharmacology); interpersonal skills training; and clinical assessment skills.

The CM practitioners rated the support they received (in establishing their clinical practices in CM disciplines) from their educational institutions, professional associations and other practitioners. Table 8.1 presents the levels of support experienced by the beginning CM practitioners, categorised by the respective disciplines of the practitioners.

Table 8.1 CM practitioners experience of being supported as a new graduate

CM Discipline	Association support		Educational institution support		Other Practitioners' support	
	Supportive	Little or no support	Supportive	Little or no support	Supportive	Little or no support
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
naturopaths/medical herbalists n= 107	63 (61.2)	40 (38.8)	34 (31.8)	73 (68.2)	69 (67.0)	34 (33.0)
Homeopaths n=57	35 (64.8)	19 (35.2)	34 (59.7)	23 (40.3)	44 (80.0)	11 (20.0)
massage therapists n=115	57 (57.6)	42 (42.4)	53 (46.1)	62 (53.9)	77 (76.2)	24 (23.8)

These results show an inconsistency across the disciplines, with support from educational institutions and other practitioners showing the most variance. For naturopaths/medical herbalists the associations' support and the support from colleagues was consistent (61% and 67% respectively). The naturopaths/medical herbalists had much less support from their educational institutions than support from their associations or peers. Homeopaths experienced the most support from peers, with association and educational institution support above 50%. The support for massage therapists from educational institutions was under 50%, but peer support was over 70% and association support above 50%.

Through the use of Chi square analysis there were associations found between how the naturopaths/medical herbalists rated their training and institutional support as well as those naturopaths/medical herbalists who rated their training "average" or "poor", with those who identified gaps their education ($p=0.014$). There was also an association between the rating naturopaths/medical herbalists gave their training and their perception of educational

institutions' support (p=0.004). A similar association was found for homeopaths rating their education and institutional support (p=0.003). No association was found for homeopaths rating of their educational institutions and gaps in their education (p=0.189). For massage therapists an association was found between how they rated their education in massage therapy and the identification of gaps in their education (p=0.047). No association was found between massage therapists education rating and institutional support (p=0.081).

The CM practitioners were also asked if they underwent an apprenticeship/internship at the beginning of their professional careers. Sixty-two percent of naturopaths/medical herbalists were mentored by experienced practitioner(s), who guided them at the start of their professional life. For homeopaths, 89% underwent a mentorship, with 54.3% of massage therapists also having guidance from experienced practitioner(s)/mentor(s).

The CM practitioners were also asked about the challenges they faced in establishing their clinical practices after graduating from their education. (This was a multiple-answer multiple choice question.) Table 8.2 presents the self-reported results for the New Zealand CM practitioners, categorised into the separate disciplines in this study.

Table 8.2 CM practitioners' challenges in establishing a practice.

Challenge	**naturopaths/medical herbalists (N= 95)**	**Homeopaths N=57**	**massage therapists N=115 (%)**
	Freq (%)	**Freq (%)**	**Freq (%)**
Financial	70 (65.4)	34 (59.6)	61 (53.0)
Management	32 (29.9)	15 (26.3)	24 (20.9)
Marketing	69 (64.5)	44 (77.2)	68 (59.1)
Peer support	25 (23.4)	13 (22.8)	15 (13.0)
Association support	12 (11.2)	6 (10.5)	13 (11.3)
Meeting local by-laws	6 (5.6)	1 (1.7)	3 (2.6)
Insufficient networks	47 (43.9)	21 (36.8)	39 (33.9)
Insufficient knowledge/training	20 (18.7)	10 (17.5)	11 (9.6)

The findings in table 8.2 show that financial challenges for new CM graduates in New Zealand are considerable, as is marketing their practices. Networking also appears to be an issue.

8.3 Questions related to research and evidence-based practice

The answers to the central questions about CM practitioners' perceptions and practices associated with research and evidence-based practice are reported in the previous three chapters. However, two important questions relating to CM research and its usefulness in CM practice were also investigated.

Along with their general perceptions (findings in chapters 5,6 and 7), the practitioners also self-reported their understanding of the importance of research to the CM professions. Table 8.3 reports on the findings for CM practitioners' views on the usefulness of CM research.

Table 8.3: CM practitioners' perceptions of the usefulness of CM research

Perception of usefulness of CM research	**naturopaths/medical herbalists n= 107 Freq (%)**	**Homeopaths n= 57 Freq (%)**	**massage therapists n=115 Freq (%)**
Useful for public to understand the benefits of CM	85 (79.4)	43 (75.4)	78 (67.8)
Useful for GPs/Other health professionals to understand the role of CM in health care	87 (81.3)	44 (77.2)	90 (78.3)
Provide scientific evidence for what I do as a therapist	80 (74.8)	31 (54.4)	70 (60.9)
No use at all	2 (1.9)	1 (1.7)	2 (1.7)

As can be seen from the results, most of the CM practitioners viewed research as having a useful role in their clinical practice, particularly in their relationships with patients and CHC practitioners. Using a Chi square analysis an association was found between the naturopaths/medical herbalists' perception that CM research is useful for GPs/other health professionals understanding of CM and the naturopaths/medical herbalists and massage

therapists view that CM practitioners should integrate with GPs[48] ($p<0.005$). No association was found for homeopaths' views of 'CM research usefulness for GPs/other health professionals understanding of CM' and homeopaths' views that CM practitioners should integrate with GPs ($p=0.678$).

8.3.1 Questions related to how complementary medicine practitioners determine patient outcomes.

The survey contained a question about the way in which the CM practitioners determine the outcomes of their clinical treatment regime. The choices were categorised into client reported symptom change, standard measurable outcomes (biometric and patient reported outcome measures using validated questionnaires) and those methodologies for determining progress that have been utilised by CM disciplines but may not necessarily have undergone standard validation appraisal. Table 8.4 tabulates the results of this question.

Table 8.4: Determination of clinical outcomes by the CM practitioners

Measure to determine effects	naturopaths/medical herbalists N=107 Freq (%)	Homeopaths N=57 Freq (%)	massage therapists N=115 Freq (%)
Client reported change of symptoms	102 (95.3)	53 (93.0)	100 (87.0)
Quantifiable measurement of change using measuring tools (QOL questionnaires, ROM, VAS etc.)	34 (31.8)	14 (24.6)	73 (63.5)
Improvements in blood tests and other medical parameters	64 (59.8)	25 (43.9)	5 (4.3)
CMrelevant traditional methods (such as Live Blood Analysis, Iris diagnosis, Pulse diagnosis etc.)	35 (32.7)	2 (3.5)	3 (2.6)

The results in table 8.4 show that CM practitioners are heavily reliant on patients reporting symptom change, rather than quantifiable measures. However, in conducting a chi square analysis across variables, an association was found between those naturopaths/medical herbalists who view research as providing provide scientific evidence for their treatments and

[48] See chapters 5, 6 and 7 of this thesis for the results data about integration with various CHC practitioners.

those that used quantifiable methods to determine the outcome of those treatments (p=0.029). A similar association between these two variables was also found for massage therapists (p=0.001) and homeopaths (p=0.007).

8.3.2 Questions to appraise complementary medicine practitioners' awareness of reporting adverse reactions

The New Zealand National Centre for Adverse Reaction Monitoring (CARM) receives reports from health professionals (as well as the public) on any adverse reaction to a pharmaceutical medicine or a natural health product (including herbal medicines). The CARM website states, *"Any suspected ADRs to any medicine, vaccine or complementary medicine should be reported. This should include those that are self-medicated as well as those prescribed."* (Centre for Adverse Reaction Monitoring, 2021). The CM practitioners were asked if they were aware of CARM. Sixty-six percent of naturopaths/medical herbalists were aware of CARM. Results for homeopaths being aware of CARM were 54.5% and only 7.9% of massage therapists aware of CARM.

8.4 Questions related to integrative attitudes and practices by complementary medicine practitioners.

8.4.1 Referrals between complementary medicine practitioners and allied health practitioners: percentages and methods

Chapters 5, 6 and 7, show the results of questions about referrals between the CM practitioners CHC practitioners. The CM practitioners were also asked about referral to other CM and allied health practitioners. Table 8.5 presents the results for the percentages for naturopaths/medical herbalists, homeopaths, and massage therapists' referrals per annum to selected CM and allied health practitioners. The percentages of CM practitioners who

referred to other CM and allied health practitioners are separated into less than 6 and greater than or equal to 6[49].

Table 8.5: CM practitioners' referrals to other CM and allied health practitioners

CM/allied health discipline Referrals to per annum	naturopaths/medical herbalists n=107		Homeopaths N=57 (%)		massage therapists N=115 (%)	
	< 6 Freq (%)	≥6 Freq (%)	< 6 Freq (%)	≥6 Freq (%)	< 6 Freq (%)	≥6 Freq (%)
Acupuncture	34 (31.8)	26 (24.3)	13 (22.8)	8 (14.0)	35 (30.4)	20 (17.4)
Aromatherapy	3 (3.0)	1 (1.0)	3 (5.3)	0 (0.0)	1 (0.9)	0 (0.0)
Ayurvedic Medicine	4 (3.0)	1 (1.0)	4 (7.0)	0 (0.0)	4 (3.5)	0 (0.0)
Chiropractic	18 (17.0)	10 (9.3)	4 (7.0)	6 (10.5)	29 (25.2)	27 (23.5)
Counselling	34 (32.0)	27 (25.2)	19 (33.3)	7 (12.3)	23 (20.0)	10 (8.7)
Homeopathy	34 (31.7)	14 (13.0)	21 (36.8)	11 (19.3)	23 (20.0)	1 (0.9)
Hypnotherapy	17 (15.9)	4 (3.7)	6 (10.5)	1 (1.7)	11 (9.6)	0 (0.0)
Māori Healers	10 (9.3)	0 (0.0)	8 (14.0)	1 (1.8)	1 (1.7)	0 (0.0)
Massage Therapists	21 (19.6)	42 (39.3)	18 (31.6)	12 (21.1)	38 (33.0)	16 (13.9)
Medical Herbalists	15 (14.0)	5 (4.7)	8 (14.0)	3 (5.3)	19 (16.6)	5 (4.3)
Naturopaths	15 (14.0)	5 (4.6)	16 (28.1)	8 (14.0)	25 (21.7)	13 (11.3)
Osteopaths	26 (24.3)	42 (39.3)	11 (19.3)	18 (31.6)	30 (26.1)	40 (34.8)
Traditional Chinese Medicine	7 (6.5)	6 (5.6)	4 (7.0)	4 (7.0)	15 (13.0)	4 (3.5)
Yoga	27 (25.2)	18 (16.8)	12 (21.1)	5 (8.8)	24 (20.9)	13 (11.3)
Pilates	19 (17.8)	16 (15.0)	10 (17.5)	3 (5.2)	23 (20.0)	28 (24.3)
Exercise physiologists	6 (5.6)	4 (3.7)	2 (3.5)	1 (1.8)	16 (13.9)	18 (15.7)

[49] The use of <6 and ≥6 is consistent with the presentation of the statistical data in chapters 5, 6 and 7.

Table 8.6: Respondent CM practitioners' referrals from other CM and allied health practitioners

CM/allied health discipline Referrals from per annum	naturopaths/medical herbalists N=107		Homeopaths N=57		massage therapists N=115 (%)	
	< 6	≥6	< 6	≥6	< 6	≥6
	Freq %	Freq %	Freq %	Freq %	Freq %	Freq %
Acupuncture	18 (16.8)	10 (9.3)	11 (19.3)	2 (3.5)	13 (11.3)	2 (1.7)
Aromatherapy	6 (5.6)	1 (0.9)	3 (5.3)	0 (0.0)	3 (2.6)	0 (0.0)
Ayurvedic Medicine	1 (0.9)	0 (0.0)	1 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)
Chiropractic	12 (11.2)	9 (8.4)	7 (12.3)	3 (5.3)	21 (18.3)	20 (17.4)
Counselling	30 (28.0)	4 (3.7)	10 (17.5)	3 (5.3)	14 (12.2)	7 (6.1)
Homeopathy	16 (15.0)	5 (4.7)	16 (28.1)	14 (24.6)	12 (10.4)	2 (1.7)
Hypnotherapy	5 (4.7)	0 (0.0)	1 (3.5)	0 (0.0)	2 (1.7)	0 (0.0)
Māori Healers	1 (0.9)	0 (0.0)	3 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)
Massage Therapists	23 (21.5)	22 (20.6)	13 (22.8)	6 (10.5)	30 (26.1)	21 (18.3)
Medical Herbalists	18 (16.8)	8 (7.5)	5 (8.8)	1 (1.8)	6 (5.2)	1 (0.9)
Naturopaths	16 (15.0)	12 (11.2)	17 (29.8)	2 (3.5)	17 (14.8)	3 (2.6)
Osteopaths	14 (13.1)	19 (17.8)	10 (17.5)	10 (17.5)	21 (18.3)	12 (10.4)
Traditional Chinese Medicine	1 (0.9)	1 (0.9)	2 (3.5)	1 (1.8)	4 (3.5)	2 (1.7)
Yoga	17 (15.9)	5 (4.7)	8 (14.0)	0 (0.0)	12 (10.4)	0 (0.0)
Pilates	12 (11.2)	0 (0.0)	6 (10.5)	0 (0.0)	18 (15.7)	5 (4.3)
Exercise physiologists	3 (2.8)	3 (2.8)	0 (0.0)	0 (0.0)	9 (7.8)	10 (8.7)

The results reported in Tables 8.5 and 8.6 indicate that there is considerable referral activity occurring between naturopaths/medical herbalists, homeopaths and massage therapists to other CM practitioners, as well as allied health practitioners. It is of note that there is referral activity occurring intra-professionally (i.e., naturopaths/medical herbalists to naturopaths/medical herbalists, homeopaths to homeopaths and massage therapists to massage therapists).

8.4.2 Referral methods used by complementary medicine practitioners to refer to other complementary medicine practitioners and allied health practitioners

Table 8.7 reports in detail the referral methods being utilised by CM practitioners to refer to other CM practitioners and allied health and table 8.8 reports the methods utilised by other CM practitioners and allied health practitioners to refer to the CM practitioner respondents.

Table 8.7: Methods of referral utilised by respondent CM practitioners to refer to other CM practitioners and allied health practitioners.

Method	naturopaths/medical herbalists N= 107		Homeopaths N= 57 (%)		massage therapists N=115 (%)	
	Freq	(%)	Freq	(%)	Freq	(%)
Referral letter	22	(20.6)	9	(15.8)	16	(13.9)
Word of mouth	92	86.0	43	(75.4)	90	(78.3)
Telephone	16	14.9	10	(17.5)	19	(16.5)
Email	12	11.2	5	(8.8)	18	(15.6)
Multiple options	82	76.6	47	(82.5)	96	(83.5)

Table 8.8: Methods of referral utilised by CM practitioners and allied health practitioners to refer to the respondent CM practitioners.

Method	naturopaths/medical herbalists N= 107	Homeopaths N= 57 (%)	massage therapists N=115 (%)
	Freq (%)	Freq (%)	Freq (%)
Referral letter	5 (4.7)	2 (3.5)	9 (7.8)
Word of mouth	80 (74.8)	42 (73.6)	76 (66.1)
Telephone	8 (7.5)	9 (15.8)	12 (10.4)
Email	9 (8.4)	3 (5.3)	11 (9.6)
Multiple options	100 (93.5)	50 (87.7)	110 (95.7)

Tables 8.7 and 8.8 show that the preferred method of referral between CM practitioners and allied health is word of mouth, with many CM practitioners utilising multiple options.

8.4.3 Types of conditions respondent complementary medicine practitioners refer to other complementary medicine practitioners and allied health practitioners.

The survey asked the respondent CM practitioners about the sorts of health conditions that they commonly referred to other CM practitioners or allied health practitioners. The questions asked in this section are different from the range of questions the respondents were asked about their referrals to CHC practitioners (see chapters 5, 6 and 7). Table 8.9 tabulates the CM practitioners' responses to the question as to why they referred patients to other CM practitioners or allied health practitioners.

Table 8.9: Reasons for respondent CM practitioners' referrals to other CM practitioners or allied health practitioners.

Reasons for patient referral to other CM practitioners	Naturopaths/medical herbalists N=107 Freq (%)	Homeopaths N=57 (%) Freq (%)	massage therapists N=115 (%) Freq (%)
Outside of scope of practice	7 (65.4)	28 (49.1)	87 (75.7)
Conditions with which I have limited experience	45 (42.1)	11 (19.3)	60 (52.2)
Those too severe for me to deal with	17 (25.2)	11 (19.3)	53 (46.1)
Those that my training did not cover	38 (35.5)	16 (21.0)	65 (56.5)
Those that I have not had good success with	27 (25.2)	12 (17.5)	47 (40.9)
Those more suited to another form of CM/Allied health practitioners	78 (72.9)	40 (54.4)	83 (72.2)
Speciality area of another practitioner	79 (73.8)	36 (63.2)	83 (72.2)
Client request	36 (33.6)	22 (38.6)	28 (33.0)

8.4.4 Complementary medicine practitioners' views on conventional health care practitioners practising complementary medicine modalities (with training)

Chapter 1 discusses the phenomenon of CHC practitioners co-opting CM modalities into their own practices as one model of integrative practice. The survey team wished to find out what CM practitioners thought about this practice, which is sometimes termed integrative medicine.

Tables 8.10, 8.11 and 8.12, show the answers of the CM practitioners to the question about CHC practitioners practising CM modalities.

Table 8.10: naturopaths/medical herbalists' views on CHC practitioners practising CM modalities.

Naturopaths/Medical herbalists N=107

Should CHC practitioners practise CM?	GPs	Specialists	Physio-therapists	Nurses	Midwives	Dietitians	Clinical Psych-ologist
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Yes, with complete formal education or training in CM modality	87 (81.3)	76 (71.0)	76 (71.0)	80 (74.8)	81 (75.7)	78 (72.9)	72 (67.3)
Yes, with some short-term practical training or workshops in CM modality	7 (6.5)	5 (4.7)	8 (7.5)	8 (7.9)	13 (12.1)	8 (7.5)	6 (5.6)
No	8 (7.5)	15 (14.0)	12 (11.2)	8 (7.5)	6 (5.6)	10 (9.3)	14 (13.1)
I don't know	1 (1.0)	3 (2.8)	2 (1.9)	4 (3.7)	0 (0.0)	5 (4.7)	5 (4.67)
Did not answer	4 (3.7)	8 (7.5)	9 (8.4)	7 (6.5)	7 (6.5)	6 (5.6)	10 (9.3)

Table 8.11: Homeopaths' views on CHC practitioners practising CM modalities.

Homeopaths N=57

Should CHC practitioners practise CM?	GPs	Specialists	Physio-therapists	Nurses	Midwives	Dietitians	Clinical Psychol
	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Yes, with complete formal education or training in CM modality	40 (80.0)	33 (57.9)	32 (56.1)	40 (70.2)	35 (61.4)	33 (57.9)	34 (59.7)
Yes, with some short-term practical training or workshops in CM modality	6 (12.0)	7 (12.3)	10 (17.6)	7 (12.3)	13 (22.8)	9 (15.8)	8 (14.0)
No	4 (8.0)	6 (10.5)	4 (7.0)	1 (1.7)	1 (1.8)	6 (10.5)	5 (8.8)
I don't know	0 (0.0)	2 (3.5)	1 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.7)
Did not answer	7 (12.3)	9 (15.8)	10 (17.6)	9 (15.8)	8 (14.0)	9 (15.8)	9 (15.8)

Table 8.12: massage therapists' views on CHC practitioners practising CM modalities.

Massage Therapists N=115

Should CHC practitioners practise CM?	GPs Freq (%)	Specialists Freq (%)	Physio-therapists Freq (%)	Nurses Freq (%)	Midwives Freq (%)	Dietitians Freq (%)	Clinical Psychol Freq (%)
Yes, with complete formal education or training in CM modality	60 (52.2)	56 (48.7)	62 (53.9)	62 (53.9)	63 (54.8)	58 (50.4)	52 (45.2)
Yes, with some short-term practical training or workshops in CM modality	17 (14.8)	14 (12.2)	19 (16.5)	19 (16.5)	14 (12.2)	8 (6.9)	9 (7.8)
No	12 (10.4)	13 (11.3)	7 (6.1)	8 (7.0)	7 (6.0)	11 (9.6)	12 (10.4)
I don't know	8 (7.0)	10 (8.7)	8 (7.0)	6 (5.2)	8 (7.0)	14 (12.2)	14 (12.2)
Did not answer	18 (15.7)	22 (19.1)	19 (16.5)	20 (17.4)	23 (20.0)	24 (20.9)	28 (24.4)

The results for naturopaths/medical herbalists, homeopaths and massage therapists show that most CM practitioners think CHC practitioners should be appropriately qualified to practice CM modalities.

8.4.5 Complementary medicine practitioners' views on the importance of integration in current healthcare in New Zealand

The CM practitioners were asked whether they believed that integration was important for current and future healthcare in New Zealand. Ninety-six of the naturopaths/medical herbalists agreed that it was important, with 77% of homeopaths and 93% of massage therapists agreeing. The naturopaths/medical herbalists were asked whether they thought their CM practitioner organisation was committed to integration of CM with CHC (n=102). Forty-seven naturopaths/medical herbalists (46.1%) thought that their CM practitioner organisation was committed to integration, with 55 (54.0%) disagreeing.

8.4.6 Usefulness of access to patient databases

Table 8.12 presents the responses of the CM practitioners to the item that asked what they thought were the most useful aspects of patient records that they would like to access in the national health databases held by CHC practitioners and health authorities.

Table 8.13: CM practitioners' thoughts on the usefulness (to their practices) of information on national patient databases

Component	Naturopath/medical herbalist N=107 Freq (%)	Homeopaths N=57 Freq (%)	massage therapists N=115 Freq (%)
Medical diagnosis	95 (88.8)	44 (77.2)	90 (78.3)
Medical history	96 (89.7)	46 (80.7)	92 (80.0)
Prescribed medication	101 (94.4)	48 (84.2)	87 (75.6)
Surgical history	98 (91.6)	45 (78.9)	94 (81.7)
Diagnostic tests (e.g., blood tests, Xray reports etc.)	101 (94.4)	48 (84.2)	83 (72.2)
Immunisation history	86 (80.4)	48 (84.2)	33 (28.7)

The results in table 8.12 show that the CM practitioners would find use in having access to information about patients beyond what they can ascertain directly from clients in a clinical setting.

8.4.7 Complementary medicine practitioners opinion on New Zealand Government subsidising CM products

The CM practitioners were asked if they thought CM products should receive New Zealand Government subsidies (similar to many pharmaceutical products). Most naturopaths/medical herbalists (73.7%) agreed that CM products should receive a subsidy, with 54.4% of homeopaths and 31.3% of massage therapists agreeing.

8.5 Questions related to complementary medicine practitioners use of New Zealand Ministry of Health services and programmes.

The questions in this section accompanied the question of CM practitioners' alignment to the New Zealand National Health Strategy (Ministry of Health, 2000). Results from this question on the alignment to the strategy appear in chapters 5, 6 and 7.

8.5.1 New Zealand Ministry of Health services

The New Zealand Ministry of Health has several services (materials) that health practitioners utilise to educate patients within the New Zealand healthcare system. These are available to

CM practitioners. The survey included a question about the CM practitioners' use of these services. Table 8.13 presents the results from this survey question.

Table 8.14: CM practitioners use of New Zealand Ministry of Health services

Ministry of Health service	Naturopath/ medical herbalist N=107 Freq (%)	Homeopath N=57 Freq (%)	massage therapist N=115 Freq (%)
Primary Health Organisation education seminars	5 (4.7)	7 (12.3)	3 (2.6)
Medsafe[50] electronic pharmaceutical medicine data sheets	32 (29.9)	5 (8.8)	8 (6.7)
Health services pamphlets	13 (12.2)	11 (19.3)	26 (22.6)
Health education pamphlets	26 (24.3)	15 26.3)	29 (25.2)

8.5.2 New Zealand Ministry of Health programmes

The New Zealand Government has several health promotion and healthcare programmes that are administered through the Ministry of Health. The CM practitioners were asked about their participation in a selection of these programmes. Whanau Ora is a Māori health programme (Te Puni Kokiri - Ministry of Maori Development, 2020). Beat Diabetes is a health promotion initiative through the district health boards (Counties Manukau District Health Board, 2005). Green Prescription is a health promotion referral service for GPs, where CM practitioners are sometimes involved (New Zealand Ministry of Health, 2017). Healthy Eating, Healthy Action is a national health promotion programme (New Zealand Ministry of Health, 2003). Fall prevention is a programme for older New Zealanders run through the District Health Boards (Southern District Health Board, 2021). Slip, Slop, Slap and Wrap is a skin cancer prevention campaign run nationally (Te Hiringa Hauora, 2021). Five Plus is a national healthy eating campaign (Health Navigator - New Zealand). The results of the question about the New Zealand CM practitioner's participation in these programmes are shown in table 8.14 below.

[50] Medsafe is the New Zealand Government agency that oversees the safety of medicines (including CM medicines and medical devices (Medsafe, 2021).

Table 8.15: CM practitioners participation in New Zealand Ministry of Health programmes

Ministry of Health programme	N/medical herbalist N=107 Freq (%)	Hom N=57 (%) Freq (%)	massage therapy N=115 (%) Freq (%)
Whānau Ora	2 (1.9)	0 (0.0)	2 (1.7)
Beat Diabetes	3 (2.8)	0 (0.0)	0 (0.0)
Green Prescription	9 (8.4)	1 (2.0)	6 (5.2)
Healthy Eating and Health Action	8 (7.5)	1 (2.0)	5 (4.3)
Fall Prevention	1 (0.9)	0 (0.0)	2 (1.7)
Slip, Slop, Slap and Wrap	1 (0.9)	0 (0.0)	3 (2.6)
Five Plus Healthy Eating	6 (5.6)	1 (2.0)	4 (3.5)
Community Education programmes	9 (8.4)	3 (5.2)	3 (2.6)

8.6 Complementary medicine practitioners' views on the priorities for complementary medicine professions in New Zealand

One of the final questions in the survey, this question gave the opportunity for CM practitioners to express opinions on critical issues for the future of CM in New Zealand. The results are tabulated below.

Table 8.16: CM practitioners views on critical issues for CM in New Zealand

Critical Issue for the future of CM in New Zealand	Naturopathy/medical herbalist N=107 Freq (%)	Homeopathy N=57 (%) Freq (%)	massage therapy N=115 (%) Freq (%)
National Register of qualified CM practitioners	85 (79.4)	45 (78.9)	77 (67.0)
Develop relationships between New Zealand & Australian professional associations	48 (44.9)	20 (35.1)	48 (41.7)
Integrate CM into New Zealand Health Care System	84 (78.5)	42 (73.7)	87 (75.6)
Develop CM research capability (skills & networks) by CM professionals	69 (64.5)	36 (63.2)	57 (49.6)
Develop a peer reviewed CM journal	59 (55.1)	21 (36.8)	34 (29.6)
Cross-disciplinary training (e.g., Public Health)	43 (40.2)	23 (40.3)	43 (37.4)
Common strategies by Professional Associations for the development of CM services in New Zealand	51 (47.7)	27 (47.4)	36 (31.3)
Improve access to private health funding	72 (67.3)	40 (70.2)	50 (43.5)
Higher Degree programmes related to CM	54 (50.5)	20 (35.1)	32 (27.8)
Statutory Registration	40 (37.4)	20 (35.1)	36 (31.3)

For naturopaths/medical herbalists, homeopaths and massage therapists the top two critical issues were a national CM practitioner register and integration of CM into the New Zealand health system.

8.7 Discussion

The survey of CM practitioners this thesis reports on contains a unique mix of questions that investigate several areas of CM practice, and CM practitioner perceptions that have not been investigated in prior studies. The mix of questions crosses a range of areas that are important in understanding the characteristics of CM and how it is practised in New Zealand. The survey was intended to provide a landscape overview of CM practice in New Zealand, the data from which could potentially provide several critical areas for more in-depth research projects, using qualitative, quantitative or mixed methods investigation. Potentially such investigation could determine factors that would assist greater understanding of CM practice in New Zealand for the purpose of integrating selected CM practitioners into the overall provision of healthcare for New Zealand. A possible audience for such information could be other healthcare providers, policy developers (at both local and national levels of healthcare provision in New Zealand) and the public.

The questions answered in this chapter provide important insight into some of the motivating factors for CM practitioners' perceptions about research and EBP, IHC (particularly CM inter-professional integration) and the CM practitioners' experiences in education as well as establishing CM practices after graduating. The CM practitioners' responses to these questions build upon the results reported on in chapters 5, 6 and 7, and are intended to give more context to the results reported in those previous chapters. The results reported in this chapter also explore important aspects that were not included in the results sections of the published papers (such as referrals to and from other CM practitioners and allied health practitioners). The following discussion provides some relevance for the findings reported in

this chapter, as well as providing a comparison between the results of this study with similar CM practitioner studies in New Zealand and internationally.

8.7.1 Practitioner support and challenges when starting their practices

Whilst the CM practitioners felt that they had good support from their peers and their associations, the CM practitioners' perspective on the support received from their educational institutions was that such support was much less than that offered by their associations and peers (table 8.1). It may well be that the financial/business challenges reflect a lack of preparation for business practices in their educational programmes. A similar result was found in a qualitative study of new graduates from a Traditional Chinese Medicine programme in Australia (n=12, RR 41%), half of whom expressed that their educational programme could have included more business skills education (Moore & O'Brien, 2012). The peer support received by the CM practitioners (table 8.1) is consistent with the CM practitioners' reporting that they received guidance/mentoring from experienced practitioners.

8.7.2 Complementary medicine practitioners' relationship with evidence-based practice and research

Perceptions of EBP and research provided data that suggests naturopaths/medical herbalists, homeopaths, and massage therapists all view research as important. The significant association between those that view research as a source of evidence to support their practices and their use of quantifiable measures to determine patient outcomes suggests that evidence is playing a role in how the CM practitioners' approach clinical practice. However, the reliance on patient reported symptom change to determine treatment outcomes greater than the quantifiable measures of change) may have implications for the possibility of integration of naturopathy/herbal medicine, homeopathy, and massage therapy with CHC. Evidence in CHC is commonly considered to be based around measurable health outcomes (Pantaleon,

2019). Establishing evidence for CM practices/treatments has been shown to be important in the acceptance of CM as a viable healthcare option by CHC practitioners in New Zealand (Bocock et al., 2011; Liu et al., 2021). Smith, Sullivan and Baxter (2011b) investigated how New Zealand massage therapists monitor treatment effects (n=66, RR 71.7%)). The study found that "client reports feel better" (97%), "range of movement" (90.1%), "pain levels" (90.1%) and "client satisfaction" (89.4%) were ranked the four most utilised methods of determining patient outcomes. Whilst the results for a similar question to massage therapists in this thesis study (see Table 8.4) were lower than those Smith et. al, found, they are comparable, and indicate that quantifiable measures (apart from range of motion and pain scales) are under-utilised by New Zealand massage therapists.

8.7.3 Referrals to and from other complementary medicine practitioners

Referrals from CM practitioners to CM practitioners is an area of study that is under-researched. Whilst studies investigating referral between CHC and CM have been undertaken (mainly CHC referral to CM) (Geisler et al., 2015; Hall et al., 2015; Shorofi & Arbon, 2017; Vlieger et al., 2011; J. Wardle, J. Adams, et al., 2013; J. Wardle, David. Sibbritt, et al., 2013; J. L. Wardle et al., 2013), few studies have investigated referrals between CM practitioners. There is some limited literature reporting about referral between CM practitioners and allied health practitioners.

A recent study of osteopaths in New Zealand and Australia (New Zealand osteopaths: n= 253, RR 48.7%; Australian osteopaths: n= 992, RR 44.5%) did report on inter-professional CM practitioner referrals as well as osteopaths' referrals to allied health practitioners (Steel, Peng, et al., 2020). The study found that New Zealand osteopaths referred to osteopaths, with mean referrals per annum being 159 (SD 64.1). The osteopaths also referred to massage therapists (mean 160per annum, 64.5 SD), acupuncturists (mean 177 per annum, 71.4 SD), naturopaths (mean 105 per annum, 42.3 SD), physiotherapists (mean 113 per annum, 45.6

SD) and nutritionists (mean 49 per annum, 19.8 SD). The osteopaths received referrals from osteopaths (mean 188 per annum, (78.3 SD), massage therapists (mean 185 per annum, 77.1 SD), acupuncturists (mean 129 per annum, 53.8 SD), naturopaths (mean 96 per annum, 40.0 SD), physiotherapists (mean 114 per annum, 47.5 SD) and nutritionists (mean 19 per annum, 7.9 SD) (Steel, Peng, et al.).

Referral to CM from counsellors was the focus of a qualitative study in the United States (n=28), which used purposive sampling (those holding a master's degree, and independent license and had experience in referring to CM). The resulting themes included the role of belief and values of the counsellors in the referral process, ethical issues related to referral to CM from the counsellors and the counsellors personal experience with CM. The counsellors were not necessarily constrained (in their referral patterns) by the results of empirical studies into CM but saw value in the holism and the connection between body, mind and spirit that they perceived as being characteristic of CM practice (Gamby et al., 2020).

The counsellors' lack of requirement for empirical evidence of effectiveness prior to referral of patients to CM practitioners is in stark contrast to some CHC practitioners approaches to referral to CM. A qualitative study of nurse practitioners investigated their attitudes to referral to CM practitioners. The results showed some hesitancy because of a lack of substantive evidence for CM therapies (Geisler et al., 2015). Several other studies have found that the perceived paucity (by the CHC practitioner participants) of evidence for CM therapies is a barrier to referral (Gaffney & Smith, 2004; Tiran, 2006).

8.7.4 Complementary medicine practitioners' awareness of Centre for Adverse Reaction Monitoring (CARM)

The low rate of awareness among the CM practitioners of the need to report adverse reactions to CM treatment is concerning. Safety of CM treatments is an issue that has been of concern for CHC practitioners in New Zealand (Taylor, 2003) and governmental committee has

recommended researching levels of safety for CM treatments in New Zealand (Koopman-Boyden et al., 2004). One of the most direct ways in New Zealand of measuring adverse reactions in CM would be if all CM practitioners (registered, or in voluntary registers) were to be required to report adverse reactions to CARM. The World Health Organisation is encouraging patient safety research (World Health Organisation Patient Safety, 2009) and this is a potentially useful area for CM research in New Zealand. Having a database of any adverse reactions in CM practices would be helpful. CM practitioner associations could be approached and encouraged to inform their practitioner members the potential for such research.

8.7.5 Priorities for complementary medicine professions in New Zealand: The CM practitioners' perceptions

One of the final questions on the CM practitioner survey, the CM practitioners' responses to their perceived priorities for the CM profession in New Zealand indicate that there is a need for CM practitioner organisations to also create goals that match such priorities.

8.7.5.1 The need for a national register of complementary medicine practitioners

The CM practitioners across all three disciplines supported a national register. Whilst there was no clear definition of what form such a register might take, the idea of a national register was part of the recommendations of a government committee on CM provision in New Zealand, who stated that could address the risk of lack of monitoring of CM practices in New Zealand (Koopman-Boyden et al., 2004).

8.7.5.2 Integrate complementary medicine into the New Zealand healthcare system

Whilst the results for the question of which type of CHC practitioner the CM practitioners should integrate with were reported on in chapters 5, 6 and 7, the CM practitioner respondents were also asked a general question about integration of CM with CHC in New

Zealand. This is first New Zealand national survey of CM practitioners to investigate CM practitioners' views on IHC, and the responses of the CM practitioners in supporting integration show a general commitment from the practitioners to integration of CM and CHC in New Zealand. The views of CHC practitioners on integration of CM with CHC in New Zealand are presented in chapter 3 of this thesis, whilst there is a presentation of studies that includes CM practitioner perspectives from North America, Europe and Australia in chapter 2 of this thesis. This topic is explored in detail in the discussion chapter (9) of this thesis, where the perspective of the CM practitioners and CHC practitioners in New Zealand are compared and contrasted.

8.8 Chapter summary

This chapter has presented results across a range of topics, providing insights into the CM practitioners' practices and perceptions on: CM education in New Zealand; support for CM practitioners when beginning their professional career; referrals between CM and allied health practitioners; methods for determining treatment outcomes; views on integration into mainstream health care in New Zealand; use of Ministry of Health resources and participation in Ministry of Health programmes, and views on priorities for CM healthcare in New Zealand. These insights allow for important issues pertaining to CM practice in New Zealand to be brought into focus. Potentially the results presented in this chapter provide data that could form the basis of more in-depth investigation of CM practice in New Zealand, which may provide useful information for CM practitioner organisations, CM educational institutions, CHC practitioners and policy direction with regard to integrating CM into the New Zealand healthcare system.

Chapter 9 - Discussion

This body of work encompasses important insights into New Zealand CM practitioners' practices and perceptions about a set of critical issues that have the potential to impact the nature of healthcare provision for CM in New Zealand. The chapters included in this thesis have highlighted discussion points that will be expanded upon in this chapter. The impact of the findings of New Zealand CM practitioners' practice characteristics, and perceptions of aspects related to the role of CM in healthcare provision within New Zealand will be discussed.

The chapter will frame the findings of the research as a holistic picture of major aspects of CM practice in New Zealand. It will also develop a depiction of the interrelationship of CM to mainstream healthcare provision and the influence upon that interrelationship of particular facets of CM practice. The characteristics and perceptions of the CM practitioners will be explored with regard to that interrelationship with the mainstream. This will then lead to the significance and importance of having a holistic depiction of CM practice and perceptions as being critical to a more complete understanding of CM practitioners contribution to mainstream healthcare in New Zealand.

This chapter discusses the findings of the survey that forms the basis of this thesis considering current literature about CM and IHC from health services research, as well as policy documents and reports from governments and other agencies. The health services research approach utilised in this thesis allows the findings to be utilised to describe the nature of CM practice and identify critical issues that could provide valuable insight for: CM practitioner organisations; CHC practitioners greater understanding of the nature of CM practice; the development of integrative frameworks of healthcare provision within New Zealand; the development of healthcare policy in New Zealand and the public perception of CM in New Zealand.

This chapter of the thesis will also compare CM practitioner respondents' (in this thesis) perspectives and practices to those of CHC practitioners, particularly in relation to IHC and EBP, but also compare the CM and CHC practitioners' views on regulation where such information is available. The health services research approach has been identified as benefitting CM research, potentially providing 'signposts' for the development of CM and its integration with CHC (Herman, D'Huyvetter & Mohler, 2006).

9.1 Primary findings from the research

Complementary medicine has only relatively recently been the subject of health services research studies. Whilst there have been many surveys of CM users, the study of CM practitioners and their practices and perceptions are fewer. Recently, CM practitioners have become researchers, adding insightful examinations of CM practices, developing evidence as to how CM practitioners might contribute to healthcare. The development of practice-based research networks in New Zealand (Steel, Peng, et al., 2020), Australia (Adams et al., 2016; Hunter, Kotsirilos, et al., 2016; Steel et al., 2014; Steel, Peng, et al., 2020) and the United States (Edman et al., 2014; Elder et al., 2017) has enabled information on practice characteristics within CM to be more readily available. Apart from chiropractic and osteopathy, such practice-based research networks for CM are in their infancy, and information about CM practice characteristics is still being developed (Lee et al., 2019). This thesis offers insights into a range of CM practice characteristics and perceptions of CM practitioners across a comprehensive range of subjects that cover some critical areas of CM and IHC, allowing for analysis of associated factors between CM practice and CM practitioners perceptions though the identification of useful associations between variables. Such analysis could very well be followed-up utilisating practice-based research networks.

The study from which this thesis has developed was titled *Mapping the natural health landscape*, the study being a comprehensive overview of CM practice in New Zealand. The

range of the questions (addressing multiple characteristics of CM practice) that the thesis answers has revealed information that has the potential to form the basis of several other studies that could explore the areas (covered by this landscape study) in greater depth.

9.1.1 The characteristics of complementary practitioners and complementary practices in New Zealand

The survey findings cover a range of practitioner and practice characteristics. The thesis has unearthed some findings that provide insight into the nature of CM practice.

9.1.1.1 The feminisation of complementary medicine practice

The predominance of female CM practitioners across all three modalities in this thesis, is reflective of many other studies with CM practitioners (Goetz et al., 2017a; Grace, 2012; Ijaz, 2019; Kennedy et al., 2015; Nissen, 2010; Steel, Goldenberg, et al., 2020).

Employment data in New Zealand shows that women tend to choose female dominated professions (Manatū Wāhine - Ministry for Women, 2021a). One in three women in New Zealand work part time, but the gender wage gap is lower than most other countries in the Organisation for Economic Co-operation and Development (Manatū Wāhine - Ministry for Women, 2021b). The predominance of female CM practitioners and their income earned related to other health professions is an area for investigation that would provide useful information for complementary practitioner organisations and CM education.

Sointu (2011) has identified that CM appears as feminised, with female practitioners and patients being predominantly female. Sointu argues that this is related to a presumed inherent holism in CM, which, with an associated caring attitude (supposedly being a female characteristic) among CM practitioners. Sointu also identifies that the *"inherent holism"* of CM attracts more women to CM practice. This may explain why CM has been marginalised for lack of 'hard' evidence (the positivist evidential paradigm being identified by Sointu with

a more masculine approach to evidence for healthcare). The phenomenon of the attractiveness of CM practice for women has also been linked to personal empowerment that women may find in the practice of CM (Keshet & Simchai, 2014) However, Ijaz et al. (2021) reporting on results of a study of CM practitioners in Canada suggest that there is still unclarity as to why women are more attracted to CM professions.

The reasons for more women choosing CM as a career path are unclear. It is evident that CM practices tend to be more part-time in nature, as the findings of this thesis and other studies (Steel, Leach, et al., 2018; Wardle et al., 2015a) show, but more investigation needs to occur in order to understand why CM in New Zealand has become a female dominated profession as the results for naturopaths/medical herbalists - chapter 5; homeopaths – chapter 6; and massage therapists – chapter 7 show. This phenomenon shows up in the findings of studies of CM practitioners world-wide (Braun et al., 2013a; Goetz et al., 2017a; Ijaz et al., 2021; Keshet & Simchai, 2014; Steel, Leach, et al., 2018). It is possible that the feminisation of CM practice may lead to occupational segregation in CM, affecting careers and lifestyles of female CM practitioners, who may become reliant on other income streams for their livelihoods (Manatū Wāhine - Ministry for Women, 2021c). Much more in-depth exploration of the social factors behind women choosing CM practice is required.

9.1.1.2 Underutilisation of complementary medicine practitioners in the health workforce

The predominance of part-time practice within the sample of CM practitioners surveyed for this thesis (range 14 hours per week for homeopaths, 15 hours per week for naturopaths to 18.5 hours per week for massage therapists) could be an indicator of the lack of recognition of CM within the New Zealand healthcare system. This lack of recognition may lead to less opportunities for CM practitioners to be employed (self-employed and/or work for an employer) full-time. However, there is limited information within New Zealand to establish

the reasons for the predominance of part-time CM practices in New Zealand. However, it is useful to review international data to gain insight as to why CM practitioners in New Zealand do not work longer hours per week.

A report from the American Association of Accredited Naturopathic Colleges (2020) found that naturopaths in the United States worked 44 hours per week on average, with those in Canada working 41 hours per week on average. Both countries have jurisdictions where naturopathy is regulated (licensed). In North America, those naturopaths who practised in unregulated jurisdictions[51] worked less hours per week. A recent study of naturopaths in Ontario, Canada, found that only 72.9% of naturopaths and 57.6% of homeopaths practised over 30 hours per week (Ijaz et al., 2021). This finding is despite these CM practitioners practice in a statutory regulated environment, indicating that, even with regulation of CM practitioners, there still may not be full acceptance of CM practitioners into the medical workforce. Naturopaths who were participants in an Australian practice-based research network (n=272, RR 100%) self-report that their average weekly hours (in practice) are 17.6 (SD 18.2), with the average patients per week being 12.2 (SD 10.2) (Steel, Schloss, et al., 2020). Another Australian study across several selected CM disciplines found that the patient contact hours per week for naturopathy/medical herbalist, homeopathy and massage therapy were as follows: naturopaths - 16.5 (SD 12.0); herbal medicine practitioners - 19.4; homeopaths 21.8 (SD 12.9) and massage therapists -18.6 (SD 11.7). Whilst these CM disciplines are well established in Australia, they remain unregulated. This is a potential factor in the underutilisation of CM as healthcare option for the Australian public. This phenomenon (low utilisation of CM practitioners) is not confined to Australia or North America. A survey of naturopaths (n=56) across 14 countries as to their practice characteristics found that 57.1% of the naturopaths saw between 11-30 patients per week

[51] Some states or provinces in North America do not have regulation for naturopaths.

(Steel, Goldenberg, et al., 2020). Self-reported workloads show that 63.1% of massage therapists in New Zealand (n=66, RR 71.7%) have less than 20 hours direct consultation client care per week (Smith et al., 2011b). An analysis of 2006 New Zealand census data found the following data for CM practitioners' hours worked per week less than or equal to 34 hours: 68.6% of naturopaths; 61.8% of homeopaths and 70% of massage therapists. This can be compared to the data for Australia (2006 census), which showed practitioners' hours worked per week less than or equal to 34: 59.8% of naturopaths; 73.1% of homeopaths and 74.2% of massage therapists (Leach et al., 2018). The international results regarding weekly workload for CM practitioners compared to the findings in this thesis, suggest that CM practitioners could be an underutilised resource within current healthcare system in New Zealand.

The need to investigate the potential greater utilisation of CM practitioners in New Zealand healthcare, and the factors that contribute to the possible underutilisation of CM practitioners, requires further and deeper investigation. Such investigation could potentially investigate systematic exclusion (social closure), which has been suggested to be an explanatory model for the lack of CM deployment in mainstream healthcare settings (Gale, 2014). Social closure has not only been utilised to exclude CM practitioners in New Zealand, but also GPs who have practised CM, a situation potentially due to the maintenance of strict boundaries within CHC (Dew, 1997, 2000). The slow progress of CM practitioners being regulated in New Zealand will be discussed in section 9.22 of this chapter. The implications of the lack of regulation of CM practitioners in New Zealand will be discussed in the sections 9.3.1.4 and 9.3.2 in this chapter of the thesis.

9.1.1.3 The significance of consultation length in CM practice

In this thesis, the mean consultation lengths (the time given to patients in each consultation) across the three disciplines (naturopathy and herbal medicine, homeopathy and massage therapy) were over 1 hour for initial consultations and over 30 minutes for subsequent consultations. This finding indicates that CM practitioners are well-placed to contribute to one of the action points in the New Zealand Health Strategy Roadmap of Actions:

> *"Foster genuine two-way communication between providers and health system users, so that providers have a good understanding of people's needs and aspirations for wellbeing before taking a course of action"* (Minister of Health, 2016a)

The role of consultation length in quality of healthcare has been investigated in CHC as well as CM.

9.1.1.4 Consultation lengths in CHC

Consultation length has been a well-discussed issue in quality delivery of CHC over many years (Freeman et al., 2002; Irving et al., 2017; Orton & Pereira Gray, 2016). A systematic review conducted in 2017 included studies of consultation length from 67 countries (n=179). Consultation lengths varied widely across the studies. Average consultation lengths ranged from 48 seconds in Bangladesh to 22.5 minutes in Sweden, with significant associations between longer consultation length and CHC practitioner satisfaction rates ($p=0.04$) and associations between reduced consultation length and burnout because of reduced personal accomplishment ($p=0.03$) (Irving et al., 2017). Consultation length in New Zealand GPs (n=503) was studied as part of a multi-national survey over 11 high income countries. Median consultation lengths were 15 minutes (inter-quartile range 15-15), the same as the median across all 11 countries. GPs job stress level rates in New Zealand were assessed as extremely stressful (5.8%), very stressful (18.6%) and somewhat stressful (57.7%), with

stress being associated with workload, which was proportionate to consultation length (Cohidon et al., 2020). Job satisfaction among GPs, with associated patient satisfaction of care has been linked to comprehensiveness of care, which is associated with consultation length. A study across 33 countries found that New Zealand GPs had an average consultation length of 14.9 minutes (SD 3.9), similar the study cited previously, the study found associations between GPs' job satisfaction, patient satisfaction with care and consultation length (Schäfer et al., 2020).

Negative influences on consultation length (less time spent) for GPs have been identified as increased deprivation in patients and tele-conversations (Stevens et al., 2017). Positive influences on consultation length in CHC (more time spent) include patients having a female gender, higher education levels, higher number of health problems and a change in practitioner (Petek Ster et al., 2008). Hutton and Gunn (2007) reviewed 29 papers (ranging from 1997-2005), finding that CHC patients with psychological problems usually had longer consultations, and also found that CHC patients' lower socioeconomic status associated with shorter consultations.

9.1.1.4.1 Consultation lengths in complementary medicine compared to conventional health care

Studies that compare consultation lengths in CM with those in CHC, consistently report that CM practitioners' consultation lengths are longer than CHCs' consultation lengths. As shown by the studies cited previously, consultation length is a factor in patient perceptions of quality of care. Most CM practitioners' consultation lengths are considerably greater than those in CHC.

The importance of longer consultation lengths has been recognised in CM as adding to quality delivery, with consultation lengths generally being much longer in CM than the average in CHC, especially general practice (White et al., 1997). Consultation length may also be associated with patient satisfaction with their care. A study in Switzerland compared

patient satisfaction rates between CHC practices (n=71) and CM practices (n=247), using analysis of consultation documentation (n=11,539) and surveys of patients (n= 6133, RR 52.2%). The practitioner sample included 5.3% of all primary providers of healthcare and 29% of CM practitioners, in Switzerland. Whilst the CM practitioners saw more patients with chronic conditions, and those patients (the CM practitioners saw) had significantly more expectations of improvement in their health, the general satisfaction rates for CM patients were higher for the CM practitioners, even though patient-reported symptom relief was poorer for the CM patients. Practitioner-patient communication was rated higher for CM practitioners. One of the factors for patient satisfaction identified in the study was consultation length, the mean of which was 28.3 minutes for certified CM practitioners, as compared to 17.3 minutes for CHC practitioners (Busato & Künzi, 2010).

A similar comparative study was conducted in the Netherlands where CM consultation lengths were at least twice, if not more than GPs consultations. The authors conclude that the time spent is a major reason for the popularity of CM with patients. The findings of the study show that, whilst the GPs only had time to discuss up to two aspects of the patient's health, CM practitioners could cover a wider range of patient concerns, mainly due to time factors in the consultation (Heiligers et al., 2010).

The time taken by CM practitioners to consider patients concerns, determinants of health and desired outcomes indicates that CM practitioners could bring added value to mainstream healthcare. However, if CM is integrated into New Zealand mainstream healthcare, and receives subsidies under current funding models, the allocation of funding linked to throughput of patients may be a barrier to CM practitioners spending quality time with patients.

Consultation time for CHC is often restricted by funding systems (especially in socialised health care systems) (Britt et al., 2005; Furler et al., 2002; van den Berg et al., 2009). This is a factor that many practitioners cannot find their way around. This constraining condition is found less in CM because, in most countries, CM practitioners are generally not funded through state health care systems, relying rather on patient self-funding or insurance (Cant et al., 2011; Clark-Grill, 2007; Cohen et al., 2005; Demmer, 2004; Thomas et al., 2001; Wye et al., 2008).

A survey conducted in 1997, with British CM practitioners found that there was a wide variation in first consultation length, from thirty to ninety minutes (White et al., 1997). In 2008, Casey, Adams and Sibbritt (2008) found that the overwhelming majority (96%) of Australian medical herbalists' consultation lengths were at least sixty minutes for the first consultation and thirty to sixty minutes for follow ups. These findings indicate that CM practitioners spend considerably more time with patients than CHC practitioners.

Smith, Sullivan and Baxter (2009) found that consultation length was a factor in patients' evaluations of their experience with massage therapy. It may be argued that, by its nature, massage therapy requires time, but there appears to be little doubt as to the value patients place on time as a major contributor to satisfaction.

A study with multiple sclerosis patients (comparing several areas of satisfaction) utilised consultation length as a major measure. This multiple sclerosis patient survey found statistically significant differences between patient satisfaction rates between CM and CHC practitioners, which the authors attribute to the possibility of greater consultation length creating a stronger patient-provider relationship (Shinto et al., 2005). A similar finding was reported for another study that compared patient satisfaction for GPs and osteopaths working in the same surgery. This study concluded that the longer time offered by osteopaths gave

patients a greater chance to “air their fears and concerns” (Pincus et al., 2000). This could be interpreted as contributing to the value patients place on the health encounter, with the longer visit length a positive factor.

These findings suggest that consultation length is a factor in patients’ experiences of quality health care. Busato and Kunzi (2010) found that “General patient satisfaction was significantly higher in CM patients, although patient-reported symptom relief was “significantly poorer”. This would point to greater complexity in patient expectations than simply an improvement of symptoms. It may be that practitioners’ fulfilling patients’ complexity of expectation requires time to explore. Perhaps this only happens when there is a sense (in the practitioner as well as the patient) of space and time to explore all the possibilities. When there is pressure to complete a strict number of consultations per day, such as occurs in many funded health systems worldwide (van den Berg et al., 2009), this may adversely affect the patient’s perception of quality and their overall satisfaction.

A solution to the consultation length (and funding) dilemma faced by many CHC practitioners could be found in the development of an integrative framework between CHC and CM. In a landmark study of an integrative clinic in the United States midwest, Salked (2008) found that referrals to practitioners who could, and did, spend more time with patients became common. Significantly these practitioners operated in a epistimological framework that was outside the biomedical model. The question may be asked - is this an indication that there is a fundamental aspect of biomedicine or CHC, that predisposes to shorter consultation length? Perhaps the purely physical/physiological investigative approach so prevalent in CHC is that predisposing factor. The ethos that healthcare must be informed by only those (physical/physiological) specific knowledge areas for answers to the patient’s condition may contribute to shorter consultation lengths in CHC.

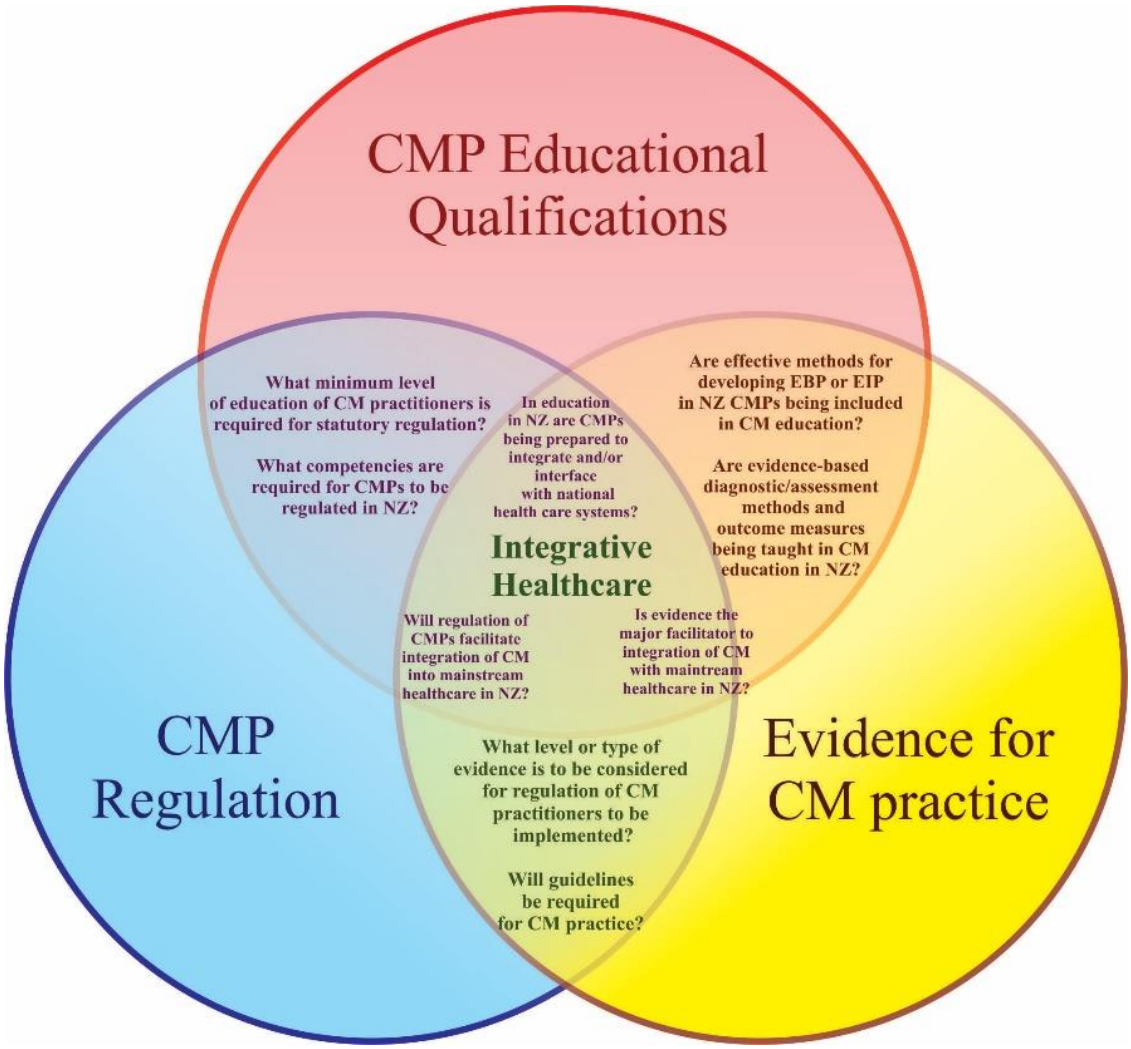
However, the integrative approach may offer another pathway, one which creates a cooperative relationship between CHC and CM. This certainly appears to be a successful model in several clinics around the world (Mann et al., 2004; Mulkins et al., 2014; Salkeld, 2008), although power and authority issues between CHC and CM need to be resolved (Templeman & Robinson, 2011).

Cost containment in health budgets is a concern world-wide (Stadhouders et al., 2019). The growing burden of chronic disease has been identified as the greatest influence on health care budgets (McPhail, 2016). Rather than solely focus on CHC, with its emphasis on pharmaceutical and surgical solutions, it may be that there is a need to shift the focus to quality-driven, educative patient care through the establishment of integrative frameworks for healthcare, such as the use of integrative clinics or referral networks. One of the major factors in providing quality is time spent with the patient to really understand their needs and to develop treatment plans that meet those needs. CM could potentially play an integral role in this patient-centred care model of health, but cost-effectiveness of CM requires further investigation (Herman et al., 2005; Kelner et al., 2002). Consultation length is a potential catalyst in the development a truly integrative health care system, with CM practitioners being able to offer quality time to patients, whilst CHC offering diagnostic and, within the CHC framework, patient management expertise. Further investigation, utilising cost-benefit analysis, might be able to establish how cost-effective integration of CM practitioners into mainstream healthcare, and the role of CM in quality healthcare, particularly in the time that CM practitioners can spend with patients, may contribute to disease prevention, which may reduce the fiscal burden of chronic disease in the New Zealand community. Other factors may contribute to a more complete integration of CM into national or regional healthcare provision in New Zealand.

9.1.2 The intersection of facets of this thesis and emergent questions for future research

Results for investigation into several of factors, such as CM education, CM use of EBP and CM practitioner regulation have been reported in this thesis. The Venn diagram (fig.9.1) depicts the overlapping facets that contribute to IHC, and potential questions for further investigation into the factors that lead to effective integration of CM into mainstream healthcare in New Zealand. These factors are explored the next few sections of this discussion chapter.

Fig. 9.1 The intersections of facets of this thesis and questions arising from those intersections



9.1.2.1 - The role of evidence-based practice in CM education

As shown in chapter 2, much of the literature about education in CM disciplines has been focused on how education influences EBP for CM. Several key studies have investigated the role of education in the development of EBP in CM practitioners (Goldenberg et al., 2017; Kelner et al., 2006; Leach et al., 2018; Litchy, 2011; Smith & Faydenko, 2020; Steel, Hemmings, et al., 2015; Steel, Peng, et al., 2018; Sullivan et al., 2014; Toupin April & Gabthey, 2013; Wardle & Sarris, 2014; Zwickey et al., 2014). Considering the results presented in this thesis (chapters 5, 6, 7 and 8) that, for massage therapists and homeopaths, there was a statistically significant association between the level of education (diploma vs degree) and the CM practitioners valuing research. (The same result was not found for naturopaths.) Whilst this is a useful finding, it indicates that there is a further need to investigate the role of EBP in New Zealand CM practitioner education, and how this might translate into CM practices and perceptions of EBP once the CM practitioners have graduated and are in clinical practice. This question is important, particularly when it is considered that the information sources (on which the New Zealand CM practitioners base their clinical decision-making) that are highly utilised by the New Zealand CM practitioners were manufacturer's seminars, google searches, and association journals and newsletters, rather than peer-reviewed scholarly journals. The methods used by the New Zealand CM practitioners to determine the results of treatment found in this thesis show that the New Zealand CM practitioners relied upon patient-reported change of symptoms, rather than measurable outcomes, indicating that the perceptions of New Zealand CM practitioners about the value of research in their practices (see chapters 5-7 of this thesis) may not be translating into their actual evidence-based practices. It appears that there that there is a more reliance on a qualitative assessment of patients' conditions, rather than objective data, which could potentially be compared to the results of empirical research. There needs to be much more in-

depth investigation into what sources CM practitioners in New Zealand utilise in their clinical decision-making and how the New Zealand CM practitioners determine the results of their treatments. An exploration into why CM practitioners utilise the information sources, as well as how these information sources are applied in practice could enable educators and CM practitioner organisations to better shape their primary educational programmes as well as continuing professional education (CPE) to find methods that could allow the effective translation of evidence from research into practice.

However, it may be that New Zealand CM practitioners are applying a much broader approach to evidence in their practices, perhaps more aligned with the definition of EBP developed by Sackett, et. al.(1996), EBP is *"integrating individual clinical expertise with the best available external clinical evidence from systematic research*", with the emphasis placed more on the CM practitioners' clinical expertise, and less of the results of systematic research. More empirical investigation into the role of education in developing EBP could well provide information that will effectively assess how New Zealand CM practitioners develop an approach to clinical practice, and whether they are implementing EBP in practice using a purely biomedical approach, or a more practice-based approach. A further in-depth investigation could follow this thesis, taking this thesis study findings and probing deeper into CM practitioners processes for developing an EBP mindset, and how this transfers into clinical practice. Such a study could provide information that might shape CM educational curricula and teaching methodology.

In many respects, the teaching of EBP in CM educational institutions is a developing field that, until relatively recently, has not been a focus of CM education (Gray et al., 2019; Menard et al., 2015; Sullivan et al., 2014). The CM practitioner respondents in this thesis report that they keep up to date with evidence for practice more through manufacturers'

seminars, rather peer reviewed journals. The CM practitioners also report that they utilise *client-reported changes of symptoms* as the main method to determine the results of their treatments, rather than quantifiable measurements, such as blood tests and validated outcome measures. These findings may illustrate the need to place more emphasis critically appraising evidence-based information within CM education. The question remains, what is the appropriate evidence framework to utilise to develop the use of evidence in CM practice? Studies that chart the CM students' development of critical thinking (in relation to evidence) through their educational programmes, and into CM clinical practices, are lacking, both in New Zealand and internationally. However, it can be noted that implementation of evidence-based approaches within CHC education and practice is still in an early phase of development (Albarqouni et al., 2018; Feller, 2019). The critical role of education in developing an evidence-informed mind-set among medical professionals (both CHC and CM) could still be regarded as an emergent area of investigation, but lessons (for CM) might be learned from some of the developments that are occurring within CHC.

9.1.2.1.1 - Mentorship of recent graduates into CM practice

Whilst most CM practitioner respondents in this thesis underwent a form of mentorship from a senior practitioner, the nature of the mentorship was not explored. In CHC, mentorship has been found to be effective in knowledge translation, particularly in the use of evidence in practice (Gagliardi et al., 2014). The New Zealand CM practitioner organisations may be well placed to create and guide more formal mentorships for newly graduated CM practitioners, particularly in the use of evidence tools, such as diagnostic methods, such as physical examination and functional tests, along with assessment instruments, such as patient recorded outcome measures (patient reported outcome measures). Mentorships could be developed under the aegis of CM practitioner organisations, whilst the creation of more formal

residency programmes is undertaken in partnership with educational institutions and integrative clinics.

9.1.2.1.2 Complementary medicine education and business success for complementary medicine practitioners

Whilst CM may have become popular with the general public (Fjær et al., 2020; Foley et al., 2020; Kemppainen et al., 2017; Pledger et al., 2010) the major challenges at the beginning of their professional life of the CM practitioner respondents in this thesis were financial, management and self-marketing. This is a common issue for CM practitioners in several countries (Robertshawe, 2006; Vos & Brennan, 2010) and one that educational institutions along with CM practitioner organisations could be well-placed to address.

9.1.2.2 Use of EBP among complementary medicine practitioners in clinical practice

The majority of CM practitioners in this thesis stated that they valued evidence from research and that research provided scientific evidence for their practices (see chapter 8 section 8.3.1). However, as discussed earlier, the findings for the CM practitioners' determination of the effects of treatment (in section 8.3.1) show a reliance on patient reported changes in symptoms. This phenomenon has been investigated in several studies around the world.

Internationally there is an apparent support for more CM research to be translated into clinical practice (Adams, 2013; Canadian Association of Naturopathic Doctors, 2021; Menard et al., 2015; Robinson et al., 2011; Standish et al., 2006; Sullivan et al., 2014; Toupin April & Gabthey, 2013). Whilst the support may be evident, the studies of CM practitioners' attitudes, perceptions and practices are limited. The literature coming out of Australia provides some encouragement to researchers that this is an area of CM practice that might provide some insights into how CM practitioners view evidence information and translate such information into clinical practice. A number of studies out of Australia have provided answers into how CM practitioners view research and translate evidence from research into

clinical practices, such as the use of evidence sources that guide diagnosis, treatment and management of patients, the use of biomarkers and patient recorded outcome measures in patient management and assessment of the effectiveness of a CM approaches and therapies (Gerontakos et al., 2021; Steel & Adams, 2011a, 2011b, 2011c; Jon Wardle et al., 2013; Wardle & Sarris, 2014).

Across several studies with CM practitioners in Australia, findings suggest that, while there is definite support for the utilisation of researched information in clinical practice, there is still reliance upon 'traditional knowledge' or other sources of information (such as clinical experience) to guide diagnosis and treatment strategies (Braun et al., 2013a; Canaway et al., 2018; Leach & Gillham, 2011; Steel & Adams, 2011b, 2011c; Wardle & Sarris, 2014). The findings in this thesis are reflective of findings in the Australian CM practitioner studies. A survey of students (cited in chapter 2) conducted in an Australian CM educational institution found that, whilst research was considered important to the participants, the confidence to undertake research was low. This was despite the respondents' views that it is important to have researchers that are also clinicians (Steel, Hemmings, et al., 2015). This finding, with similarities to the findings in this thesis, indicates that educational institutions approach to teaching EBP and research methods may require further appraisal as discussed previously. It also indicates the need for more CM practitioners to undertake post-graduate studies to further their skills in conducting research, which is a critical step in building professional attitudes and practices, which contribute to developing CM professions (Phillips & Dalgarno, 2017).

Whilst the support for evidence-informed practice among CM practitioners in Australia and New Zealand is encouraging, 'traditional knowledge' is still valued within CM practices. Cassidy (2019) argues for *"cultural relativity"* in healthcare, which potentially transcends the

debate on what is evidence and what is not. Wiese (2016) argues that 'traditional evidence' caters for the complexity that patients often present with, as well the complex nature of CM approaches to health and is situated within the paradigmatic and epistemological nature of CM, therefore needs to be included in any consideration of what is evidence for CM practices.

Practices in CM often sit outside the boundaries of what has been tested using biomedical explanatory processes and randomised controlled trials (Cohen, 2007). Coulter (2004) suggests that the differences in heuristic assumptions (between adherents of CM and CHC) about what evidence for healthcare is actually comprised of, represent a "paradigm clash" that has led to different methods and models of integration (of CM and CHC), which may have influenced the effectiveness of attempts to create integrative clinics or networks of practitioners.

A criticism commonly levelled against naturopathy is that there is a lack of evidential base for naturopathic care (Atwood, 2003; Beyerstein, 2004; Ernst, 2001; Hermes, 2018). Atwood (2003) states that naturopathic education is "replete with pseudoscientific, ineffective, unethical, and potentially dangerous practices". While this statement was made 15 years ago, the type of rhetoric that shapes such statements still exists in the literature (Ernst & Smith, 2018; Offit, 2013) and often informs those who would deny the genuine scholarship that is emerging in the field of CM.

Lewis (2019) and Flatt (2013) utilised content analysis of articles to critique the arguments of a group known as the 'Friends of Science', who have emerged in Australia and have opposed CM education in universities for several years. The argument of this group is that CM is unscientific, not based in evidence and totally unsuitable for educational delivery in mainstream universities. Flatt argues that statements of the Friends of Science are being

weaponised to de-legitimise CM. Flatt states that the statements lack accuracy as to the distinctions in the evidential basis and approaches of the various disciplines within CM. Flatt also argues that these arguments (of the Friends of Science) represent a type of fundamentalism that limits discourse with educational institutions around the value of CM as a valid field of study in tertiary education in Australia. On the other hand, Lewis focuses on how the Friends of Science statements have been used to propagandise CM as unethical and even dangerous, using mass media as a tool for this message. Hermes (2018) in the United States has embarked on a similar campaign as the Friends of Science.

Such incidents as outlined in the previous paragraph represent the "paradigm clash" that exists between what is acceptable evidence and what is outside the boundaries of science.

It is important to note that there is meaningful and useful exploration of the evidence framework that might be best suited to investigating evidence within CM (Brosnan, 2016; Canaway et al., 2018; Kennedy et al., 2016). Much of this exploration mirrors the thinking about what constitutes evidence for practice in CHC.

9.1.2.3 - The nature of evidence-based practice in medicine is changing

The original evidence-based medicine concepts and epistemological principles (Sackett et al., 1996) have undergone considerable redefinition over the past twenty-five years with the primacy of the randomised controlled trial being supported by some, but debated by others (Mugerauer, 2021). For instance, Judith Green (2000) states that EBM could potentially be *"…deconstructed as a discourse which functions to maintain the `purity' of medical practice in the face of threats to autonomy…"*. Could one of those threats be the rising popularity of CM? Wood, Ferlie & Fitzgerald (1998), two years after Sackett et. al. (1996) developed the concept of EBP, stated:

> *"Whilst the appeal of this dualist model (EBP52) is its maintenance of stable boundaries and firm divisions: objective/subjective, research/practice, facts/values, such thinking is almost always structured so as to privilege one side of the dualism over the other. This has made possible the hierarchical distinction between, for example, the objective ``facts'' of biomedical research and the subjective ``mere knowledge'' of clinical practice"* (Wood et al.)

A similar debate has been occurring in CM, with many CM researchers questioning the hierarchy of evidence that has been developed within medicine (University of Washington Health Sciences Library, 2007). Walach et. al (2006) developed a circular model of evidence, which considered outcomes from several methodologies as having counterbalanced strengths and weaknesses to create a *"pragmatic"* outcome of evidence for clinical practice within CM. This has now been considered as a useful model for CHC by Tugwell and Knotterus (2015). Jonas (2001) proposed the "evidence house" model, which is also inclusive of different methodologies depending on the applicability of the outcomes of each methodology to CM practice. Whole systems research has been proposed by several authors and the literature around the evidence framework might be best suited to CM, often supports a whole systems research approach, a methodology that incorporates methods to capture the complex nature of CM practice (often across several modalities and disciplines), patient-centeredness aspects of CM, holism (consideration of all levels of patients' experience) and the focus on health, rather than disease conditions (Elder et al., 2019). To investigate healthcare in this manner, innovative approaches need to be utilised, including those often utilised in health services research (Leech et al., 2018a) with a focus on the patient-practitioner relationship, which is a critical component of CM care (Kienle et al., 2019).

[52] Brackets inserted by the author of this thesis

The teaching of evidence approaches in CM education seems to play a significant role in shaping CM practice. It can also be an important factor in how CHC views CM practice and how CHC might interact with CM.

The following statement from the American Association of Family Physicians reflects a view that is not necessarily widespread among CHC, but is often found in formal documents or statements from CHC organisations:

> *"The American Academy of Family Physicians (AAFP) opposes licensure of naturopaths. Naturopathic theory and practice are not based upon the body of basic knowledge related to health, disease, and health care that has been accepted widely by the scientific community. Moreover, the scope and quality of naturopathic education do not prepare the practitioner to properly and accurately diagnose illness or provide appropriate treatment. Governmental endorsement of naturopaths through licensure will jeopardize the health and safety of patients."* (American Association of Family Physicians, 2020)

In response to this type of criticism Jagtenberg, Evans, Grant et. al. (2006) argue that naturopathic healthcare is complex and grounded in philosophy and values that potentially render the generally accepted concept of 'evidence', as being a hierarchical set of appraisal methods, with the randomised controlled trial (randomised controlled trial) and systematic reviews of randomised controlled trials at the peak of the hierarchical pyramid (Hariton & Locascio, 2018), less applicable to naturopathy. Gagnier (2004) has responded directly to Atwood's (2003) labelling naturopathy as *"pseudoscience"* not grounded in scientific principles[53], by comparing naturopathic education favourably to regular medical education

[53] This is a common assertion in literature critiquing CM. However, there is often no clear definition within such literature as to what 'science' is, apart from the citing of RCTs being the gold standard for medical

and suggesting that evidence for approximately half of current (in 2001) medical procedures is lacking. Power (cited in Schleich, 2021) states that the science that underlies medicine is not often questioned, implying that it is important to challenge accepted understanding with the medical field and, potentially, CM fills that role to some extent (despite an increasing biomedical influence on CM).

The above criticisms of CM imply that there is a wide gulf between CM practice and EBP. The response from CM adherents is that the principles of CM are sound and historically CM has been shown to be mostly safe and effective in the treatment of health conditions, as evidenced by its popularity as a health choice by patients. These two, seemingly irreconcilable, positions indicate that there are considerable barriers to the acceptance of CM by CHC, at least on the premise of an evidential basis of CM. However, as CM research grows, and CM practitioners are more involved in that research (Kania-Richmond et al., 2017; Rossi et al., 2015; Wardle et al., 2015a; World Naturopathic Federation, 2017b), there is potential for greater dialogue between CM and CHC practitioners, with the factor of greater commitment to the development of evidence for CM as a common denominator in such dialogue.

9.1.1.4.2 The impact and influences of evidence-based practice within complementary medicine on potential integration of complementary medicine into mainstream healthcare

The literature on IHC has described the integrative model of health care as being evidence informed (National Center for Complementary and Alternative Medicine, 2008; Phelps & Hassad, 2011; Rakel & Weil, 2012; Ross, 2009). Those CHC practitioners who are open to

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treatments. Atwood makes several claims about naturopathy being based on assumptions but does not define what he terms as "conventional care", which he claims is scientific. The debate about what constitutes 'evidence' still remains vigorous in both biomedicine and CM.

interacting with CM practitioners often discuss the role of evidence as being a factor in that interaction (H. Baer, 2008). However, perceived lack of evidence has been shown to be a critical barrier to acceptance and interaction of CHC practitioners with CM practitioners (Bocock et al., 2011; Engel et al., 2016). Nevertheless, a study of midwives an New Zealand and Canada found that, although the midwives perceived a lack of evidence for CM in birth processes, use of, and referral to CM was still considerable (Harding & Foureur, 2009).

Evidence for effectiveness (or lack of) of CM definitely plays a role in providing a facilitation of integration of CM with CHC. With the increasing body of evidence for CM approaches to healthcare, evidence for CM effectiveness, be it therapies or approaches in CM practices, has a potential role in CM gaining more acceptance in mainstream healthcare though it may require regulation of CM practice to enable a more integrative healthcare in New Zealand.

9.1.1.5 Regulation of complementary medicine practitioners: A passport to integration?

The findings in this thesis show that the CM practitioner respondents agreed that regulation of CM practitioners should occur, particularly statutory regulation of their particular discipline. Whilst no significant associations were found between support for regulation, age, educational qualification or years in practice, more examination of such associations, including support for CM practitioner regulation and attitudes to CM integration into mainstream healthcare, would provide information to CM practitioner organisations and educational institutions that could influence curricula as well as CPE. The CM practitioner organisations would be well-advised to explore such associations prior to embarking on applications for regulation. This information could guide the thinking of the CM practitioner organisations in terms of providing a rationale for regulation of CM in New Zealand.

Issues of power and social closure are particularly evident when an emerging profession begins to seek recognition using a regulation pathway.

9.1.1.5.1 Why Regulation of complementary medicine in New Zealand is a critical and fertile area for future research

Chapter two provided an overview of regulation across several countries and world regions. The strong imperative from the World Health Organisation for member states to regulate CM has yet to be realised within the Western Pacific Region of World Health Organisation. A World Health Organisation report on health workforce regulation in the Western Pacific Region found that:

> *"Information accessed suggests actions are under way by many countries to better integrate traditional and complementary medicine. Regulation is considered to be a useful vehicle for improving the training and standards of traditional medicine practitioners; however, not all countries and areas regulate traditional medicine, and one country, Vanuatu, specifically excludes traditional medicine from its health practitioners act."* (World Health Organisation, 2016)

In other countries of the Western Pacific Region, regulation of CM practitioners is limited in the scope of CM disciplines regulated, with China regulating Traditional Chinese Medicine and acupuncture, and other countries regulating a few CM disciplines.

In New Zealand, health profession regulation occurs under the Health Practitioners Competency Act (HPCA) legislation, which addresses the competence and safety of the health practitioners, through a variety of measures. The purpose of the HPCA is predicated on risk[54] primarily, with competence to deliver health services safely being the primary purpose. The act states:

[54] In the HPCA, the word *risk* appears 22 times throughout the text of the act.

> *"3 (2) d. This Act seeks to attain its principal purpose by providing, among other things: for power to restrict specified activities to particular classes of health practitioner to protect members of the public from the risk of serious or permanent harm*
>
> *(3) b. …enable the responsible authority to order the interim suspension of a health practitioner's practising certificate if there are reasonable grounds for believing that the practitioner poses a risk of serious harm to the public by practising below the required standard of competence:* ("Health Practitioners Competence Assurance Act," 2003)

At present only chiropractic (New Zealand Chiropractic Board, 2021), osteopathy (OCNZ, 2019) and recently, Traditional Chinese Medicine and Acupuncture (Acupuncture NZ, 2021) have statutory regulation. Medical Herbalists have applied to be a registered discipline under the HPCA, with no progress in this endeavour to date.

As the establishment of legitimacy for CM is contingent upon a sound evidential basis of risk, the MACCAH report recommended that selected CM practitioners be regulated:

> *"Practitioners of complementary and alternative health should be regulated according to the level of inherent risk involved in the modalities they practise.*"
>
> *(Koopman-Boyden et al., 2004)*

Regulation of healthcare professions in many countries is based on assessed risk (Bismark et al., 2015; Shinkfield, 2017). Risk within CM is a poorly researched topic. Risk assessment has been mostly confined to CM products (Harris & Shaw, 2018), with investigation into risk in CM practice rarely undertaken (White et al., 2014). Whilst this thesis does not provide an assessment of risk with CM practice in New Zealand, what it does provide is an overview of CM practitioners practices in relation to referrals to CHC practitioners and other CM

practitioners and allied practitioners, as well as reporting of adverse effects information. Both issues contain a degree of risk.

The finding in this thesis that most New Zealand CM practitioners do not practise formal referral processes identifies an inherent risk that CM practitioner organisations should consider as a potential issue for patient safety. This risk could be mitigated with education programmes, either included in the initial educational qualification programme of CM practitioners, or in CPE programmes for graduated CM practitioners. Such programmes should instruct CM practitioners in formal referral processes, establishing safe and effective referral processes. The effectiveness of such programmes could undergo an evaluation process to assess their contribution to professionalisation of CM practitioners.

The reduced awareness among the respondent CM practitioners (in this thesis) of the New Zealand Centre for Adverse Reactions and Monitoring (2021) is of concern. More investigation is required to establish whether this is a failing of the education of CM practitioners in New Zealand, or a result of poor practice management. This finding should alert the CM practitioner organisations to ensuring awareness of CARM and encouraging reporting to CARM (where appropriate) as part of educational and practice standards in New Zealand.

Another area that is highlighted by this thesis is the CM practitioners' self-reported low use of biomarkers and quantifiable questionnaires, such as patient reported outcome measures (PROMs), to establish the patients who have conditions or symptoms that might expose them to risks by practices that the CM practitioners undertake (such as the administration of herbal remedies that have potential to interact with pharmaceutical medicines).

Whilst a search of complaints to the New Zealand Health and Disability Commissioner (2021) found only 15 complaints about CM practitioners (1 is a complaint about a

homeopath, and one about a naturopath) across the past 22 years since the commission's establishment, such risk is often highlighted in media, and cited in journal articles. A more in-depth investigation of safety practices and risk in New Zealand CM would be useful to CM practitioner organisations and could form part of any application for regulation of CM in New Zealand.

9.1.1.6 The New Zealand complementary medicine practitioners' alignment with national health goals:

The thesis found that the respondent CM practitioners self-reported that their practises were well aligned with most of the goals in the (at the time of the data collection) current New Zealand Health Strategy (Ministry of Health, 2000). The health strategy was reviewed and revised in 2016 and two documents were produced to outline the base policy objectives and the implementation guidelines. The New Zealand Health Strategy Document (Minister of Health, 2016a) identified rephrased goals (similar to, but updated from the initial strategy document).

The 2015 strategy identified: *"...integrating health services and making better connections with wider public services, as well as promoting wellness and preventing long-term conditions through both population-based and targeted initiatives.*"

In addition to the base strategy document a roadmap document was developed (Minister of Health, 2016b). This document frames the implementation of the New Zealand Health Strategy from 2016 onwards. This document identifies implementation goals similar to those the CM practitioner respondents in this thesis self-reported that implemented in their practices. Included in these implementation goals are:

> *"Increase the effort on prevention, early intervention, rehabilitation and wellbeing for people with long-term conditions, such as diabetes and cardiovascular disease, by*

addressing common risk behaviours such as obesity and intervening at key points across the life course." (Minister of Health)

For statutory recognition of CM in New Zealand, it would be worth CM practitioner organisations citing the results of this thesis to support more inclusion within the New Zealand healthcare system. The findings of the is thesis show that, while CM practitioners self-report their alignment to the goals within the New Zealand health strategic documents, participation of CM practitioners in national health programmes is low. To date, most CM practitioners' professional careers are focused on individual clinical consultations (Massage NZ, 2016; Naturopaths and Medical Herbalists of New Zealand, 2020b; New Zealand Council of Homeopaths, 2015).

There is certainly a need to investigate more deeply potential contributions that CM practitioners might make towards the goals of the New Zealand healthcare system, and how regulation and integration might facilitate such a contribution.

9.2 Significance of the research findings

This thesis has provided an overview of selected CM practice disciplines in New Zealand, allowing a broad range of characteristics of CM practitioners to be described and analysed. This thesis depicts CM as a potential healthcare option within New Zealand but identifies the barriers that exist for acceptance of CM into the mainstream provision of healthcare in New Zealand. The characteristics of CM practice are presented within a range of domains that allow systematic exploration of CM practice and provides for understanding and clarity about CM practitioner practices and perceptions of their role in the delivery of healthcare in the holistic context. The practices depicted have two aspects: those that apply to the CM practitioners own internal management of clients: practice behaviours, such as consultation length, application of EBP and determination of effect of treatment, and those behaviours that

reflect the CM practitioners' relationships with the wider healthcare system: referrals to other practitioners, reporting adverse reactions from CM treatment, and alignment with national health goals. These findings are presented within the broad context of the integration of CM with mainstream healthcare, and depict a profession that, whilst having its own internal validity (philosophic and value base) that shapes the CM practitioners' practices and perceptions, is still struggling to find its place within the wider healthcare provision in New Zealand.

The history of CM in New Zealand has been presented to show how it has gradually emerged from an environment of non-acceptance and persecution (the *Quackery Prevention Act*) to one of almost grudging acceptance by some quarters of mainstream medicine (reflected in the referrals to CM practitioners from some CHC practitioners). Such acceptance is not without its reservations from CHC practitioners, which are mostly centred on a perceived lack of evidence for CM practices. This section of the chapter will explore the significance of the findings about the CM practitioners' relationships with researched evidence, both their perceptions and attitudes, as well as their practices that reflect those perceptions and attitudes. It will identify how the relationship to evidence within the CM practitioners' practices might affect regulation of CM practitioners and their integration into mainstream healthcare.

9.2.1 Education and Evidence

Education has been shown to have a significant influence on CM practitioners' relationship to evidence. The CM practitioners in this thesis all underwent their education in CM prior to 2010. Whilst the content of educational programmes may have developed since that time, questions remain about how educational programmes in CM in New Zealand shape CM practitioners' relationships to evidence and how that might translate into effective and safe CM practice.

Considering the overlap between education and evidence for CM practice, some questions emerge around how education might prepare students for CM practice (see fig. 9.1). A key question is the role that education might play in developing effective EBP for New Zealand CM practitioners. Whilst there is some empirical evidence for the role education plays in developing EBP in CM practitioners from studies worldwide, no in-depth studies have been conducted in New Zealand.

Whilst this study has set out some of the parameters that may guide future research with CM practitioners' perceptions and use of evidence, there remains scope for some longitudinal studies, beginning with CM students, and following their progress (in relation to the perceptions and use of evidence) into CM practices. Such studies could also measure how the application of evidence affects the CM practitioners' interactions with CHC, and their integration into mainstream healthcare in New Zealand. This proposed longitudinal research could also utilise information from other current longitudinal studies of New Zealanders, such as Growing up in New Zealand (University of Auckland, 2021)[55] to track the change in perceptions and use of CM of the wider public in New Zealand and potential influences on CM practice in New Zealand these perceptions and use might have.

9.2.2 Integration of conventional health care with complementary medicine

The popularity of CM among the New Zealand population (Milne et al., 2000; Pledger et al., 2010) indicates the need for a more integrative model of health care in New Zealand, particularly in regard to referral processes between CM and conventional care practitioners. One such barrier to integration is the definition of CM as being outside of "commonly accepted medical practice" (Medical Council of New Zealand, 2017). This definition is potentially misleading and possibly unhelpful to the process of integration and referral

[55] The *Growing up in New Zealand* study is a longitudinal study of New Zealanders that includes questions on CM use of participants.

between CM and conventional practitioners. A lack of knowledge about CM by conventional practitioners (Upsdell & Jaye, 2011) is indicative of a need for better communication between CM and conventional practitioners, potentially leading to a more integrative approach to health care. The decline in GPs themselves practising CM and increasing referrals to CM practitioners (Poynton et al., 2006) may be a sign 0f emergent integrative health system, albeit one in which there is no statutory regulation of CM practitioners. This may benefit the many New Zealand patients' who perceive that CM can increase their quality of life and management of health conditions (Bennett et al., 2009; Chrystal et al., 2003; Evans et al., 2008; Holt & Gilbey, 2009; Milne et al., 2000; Pledger et al., 2010; Trevena & Reeder, 2005).

However, the difference between GPs knowledge of patients' use of CM and the patients' stated use of CM (Taylor, 2003) possibly indicates a perceptual gap, which could have an effect in referrals and referral rates. So too the attitudes and beliefs of some GPs about CM (Upsdell & Jaye, 2011) could have a similar impact. But there is evidence that indicates a general conventional healthcare practitioner practitioners' acceptance of integrative medicine in New Zealand (Bocock et al., 2011), despite apparent scepticism from some sections of the medical workforce (Stapleton et al., 2015). This acceptance may lead to more inclusiveness of CM practitioners in the range of healthcare options presented to patients by GPs and others in the conventional healthcare practitioner workforce. A difference that has been found between New Zealand midwives' identification of referral numbers to CM (Harding & Foureur, 2009) and reporting from CM practitioners (in this thesis) on referrals received from midwives indicates that the referral process is not always effective. This difference may indicate a gap in the referral process, where there is little management of the integrative process, and it is left to patients to facilitate their own integration of CM with conventional

care (or a general perception gap (between CM and conventional practitioners). More investigation is required to determine this critical issue.

The finding of this thesis that patient-conducted, word of mouth referral is the most prevalent method of interaction between practitioners indicates that further investigation of the rationale and mechanisms of referrals between conventional care and CM should be undertaken to determine issues of safety and effectiveness of patient care within the current integrative models practised in New Zealand. Regulatory issues, which may also affect referral numbers, could be factored into such studies.

An area that has the potential to influence regulation is the practitioners' commitment to an evidence-informed model of practice. The findings of this thesis indicate that CM practitioners' valuing and utilising researched evidence could also be utilised in any advocacy for statutory regulation of CM practitioners, but further investigation is required to determine the role of evidence-based practice in opening the way to statutory registration for CM practitioners. There is some evidence that patients are in support of greater integration of CM into conventional health care (Chan & Whitehead, 2008).

9.2.3 Education and complementary medicine practitioners' wider involvement in community health

Whilst the CM practitioner respondents in this thesis identified their alignment with the goals of the New Zealand Health Strategy, the findings reported in this thesis show that their involvement in health promotion programmes in New Zealand is limited. This may be a result of less acceptance of the value of CM in health promotion programmes, but also may be a result of less confidence among CM practitioners to engage themselves in such programmes. Potentially CM practitioners could be educated about the nature and implementation strategies of governmental and non-governmental organisations in promoting health in the community. Post-graduate programmes could educate CM practitioners as to

how such health promotion programmes are developed, also in the evaluation of these programmes. There is also a challenge (implicit in the findings of this thesis) for CM practitioner organisations to partner with health promotion programmes to develop employment pathways for CM practitioners to engage with organisations delivering such programmes. It is also possible that educational institutes could develop programmes in evaluation research science, in partnership with public tertiary institutions, to provide further employment for CM practitioners in this important area of health delivery.

That stated, there is a real concern that the standardised approaches inherent in public health programmes are not compatible with the more individualised approaches of CM (Dew & Carroll, 2007), but investigation into how to adapt the individualised methods that CM practitioners utilise to assess and treat a variety of conditions, especially chronic illness (Verhoef et al., 2005; Verhoef et al., 2004) to a wider population needs to be conducted. Certainly, CM and IHC could be a good fit for health promotion in the community (Ali & Katz, 2015; Hill, 2003; Kennedy et al., 2018), but the evaluation of CM practitioners' potential role(s) in health promotion activities and community health programmes needs to be carefully investigated utilising programme evaluations from successful endeavour internationally.

9.2.4 Complementary practitioners' readiness to be integrated with the New Zealand healthcare system

The review of literature about interactions between CM and CHC practitioners (chapter 3 section 3.8) found that there is considerable support from CHC practitioners to interact with CM practitioners, albeit with the proviso that such interaction be supported by evidence of effectiveness and safety of CM. Many CHC practitioners wish to increase their understanding and knowledge about CM practices (Bocock et al., 2011; Poynton et al., 2006). Potentially this attitude among CHC practitioners indicates an openness to referring patients to CM

practices. This thesis found that CM practitioners referred patients to a variety of CHC practitioners, also indicating some openness to interacting as well as potentially integrating with mainstream healthcare.

Whilst the CM practitioner respondents in this thesis did refer to CHC practitioners, the lack of formal processes within their referral processes, such as utilisation of word of mouth, rather than written or emailed referral letters, indicate that there are gaps in both the CM practitioner respondents' educational instruction in safe and effective referral processes, but also the CM practitioners' appreciation of the importance of such processes in effective patient management. This situation could arise from a lack of understanding within CM practitioners of how the New Zealand health system functions within the network of healthcare delivery. There is a burden of responsibility on educational institutions and CM practitioner organisations to ensure that CM practitioners are informed of their duty of care to patients through a more thorough knowledge of the processes utilised by the New Zealand healthcare system.

Greater communication between CM and CHC practitioners could also have the added benefit of creating greater awareness of CM practices among CHC practitioners, a situation that has been highlighted by many of the studies with CHC practitioners included in the review of literature about CHC practitioners' and CM practitioners' perspectives about IHC in New Zealand (chapter 3, section 3.8). Awareness of CM practices by CHC practitioners, and more awareness about CHC practices and systems could create a dialogue between these two valuable sectors of New Zealand healthcare provision. Such dialogue would benefit New Zealand patients who often feel that they cannot communicate effectively with CHC practitioners about their use of CM (Chrystal et al., 2003; Wilson et al., 2007).

The practitioners were surveyed as to their views on how they would like to be funded in the future, either government funding or private (e.g., insurance). Funding of CM practice is an aspect that has not been well investigated. In 2008 a qualitative study investigated CM services within the United Kingdom's National Health Service (NHS). In the findings, the question of the NHS funding CM services (in the views of the NHS staff participants) was linked to evidence of the effectiveness of the CM modality (researched evidence) and safety aspects of the modality (Wye et al., 2008). A similar study in the United Kingdom associated funding for CM with "*cost cutting*" (Sharp et al., 2018). Research into the implications of methods of funding for CM practices could be included in a wider investigation of regulation and integration for CM practitioners in New Zealand.

9.3 Implications from the research

This thesis has identified several areas related to CM practice in New Zealand. The information gained from the CM practitioners could prove to be useful to stakeholders, both within CM, and those that interact with CM practitioners in a variety of ways. The information is wide-ranging in scope and, whilst some of the domains that were surveyed open the way to further investigation, the data that has been presented in the findings contains information that are useful in providing guidance for educators, CM practitioner organisations, CHC practitioners and policy makers, governmental policy makers and the public of New Zealand. This section will identify some of the ways in which the information from this thesis could be utilised to better serve the interests of healthcare provision in New Zealand with regard to CM and IHC.

9.3.1 Implications of the research for complementary medicine practitioner organisations and complementary medicine educational institutions

Several important findings within the research could be deemed useful for CM practitioner organisations to consider in their planning for CM provision in New Zealand. The disciplines

of naturopathy and medical herbalism, homeopathy and massage therapy in New Zealand have governance organisations that oversee standards of practice and education of CM practitioners, administer complaints from patients, conduct CPE in their respective disciplines, as well as influencing the public perception of their CM disciplines through public relations and responses to matters raised (pertaining to the practice of their respective disciplines) in public forums, such as media and government communications.

The information contained within the findings of this research has wide-ranging implications for CM practitioner organisations across the domains of: CM practitioners practice characteristics; attitudes to, and practices related to EBP and research; CM education in New Zealand and internationally; attitudes and practices of the CM practitioners in relation to integration of CM into mainstream healthcare; perception of the CM practitioners about regulation and what regulation might mean for CM in New Zealand in the future; and perceptions of the CM practitioners about alignment with New Zealand's strategic goals for healthcare, with participation of the CM practitioners in public health initiatives (particularly health promotion programmes).

Educators in CM in New Zealand can utilise this thesis to help develop curricula that may better develop attitudes and practices within students related to the use of researched evidence and the integration of such evidence into CM practices in a manner that is reflective of the values and philosophical underpinning of CM disciplines. Whilst this might be challenging to educators in that research paradigms, such as whole systems research are still in their infancy, the use of PROMs and other clinical outcome measurement instruments, that this thesis identifies as being underutilised in the CM practitioner respondents' practices could be better developed through the CM students' educational programmes.

9.3.1.1 The gender question

The findings of this study show the predominance of female practitioners within the CM practitioner disciplines surveyed. This phenomenon is similar to the findings of many other studies internationally (Goetz et al., 2017a; Grace, 2012; Ijaz, 2019; Kennedy et al., 2015; Nissen, 2010; Steel, Goldenberg, et al., 2020). This finding is reflective of a wider social issue within CM, that of remuneration as explored in section 9.1.1.1 of this chapter.

It would be useful for the CM practitioner organisations to gain greater understanding of why their respective disciplines are so female dominated particularly to gain information as to how successful careers in CM practice (for both genders) can be better fostered by the CM practitioner organisations. This may include being more active in gaining recognition for their discipline through regulation and integrating into mainstream healthcare.

Whilst there are any number of studies that show that the female gender dominates many CM professions (Sointu, 2011), the reasons why this phenomenon is so prevalent have not been well explored. It may be that a qualitative approach to investigating the predominance of the female gender in CM is required to gain a greater understanding of the reasons why the female predominance in CM professions occurs. This would allow the CM practitioner organisations and employers of CM practitioners to gain insight across the professional organisations being able serve the CM practitioners, as well as uncover the reasons for the lack of male representation.

9.3.1.2 The part-time nature of complementary medicine practices

The finding in this thesis that most CM practitioners are in part-time practice, reflective of surveys of CM practitioners internationally, indicates that CM practice may not be attractive to many young people of any gender. Regulation and integration may be a pathway to full-time careers in CM, and the main responsibility for pursuing regulation lies with the CM

practitioner organisations. A holistic review of the CM professions' standing within the wider healthcare framework could assist CM practitioner organisations to better tailor standards and CPE to achieve greater use of CM within the New Zealand healthcare system.

9.3.1.3 Evidence and education: Pathways to integration?

The strong links between education and the development of an EBP mindset among CM practitioners, signals to CM practitioner organisations the need for the development of educational and practice standards that support the use of appropriate evidence for CM practices within the professions. A longitudinal study that follows the development of CM practitioners from a beginning student, through graduation as a CM practitioner into their practices or employment would make useful information to CM practitioner organisations to support the development of professional standards (educational and practice) that raise the standing of the CM professions.

9.3.1.4 Educational pathways in complementary medicine: Do they lead to a viable profession?

The finding in this thesis that many CM practitioners struggle in their early years in practice, with a lack of support, from educational institutions in particular. This finding, coupled with the challenges that the CM practitioner respondents in this thesis identified, indicates that CM students need to be better prepared for careers in CM. The recommended longitudinal study (see section 9.2.1 of this chapter) would provide information that might allow CM educational institutions to develop programmes that better prepare students to be successful practitioners. This could require greater coordination between CM practitioner organisations and the CM educational institutions.

9.3.1.5 - Regulation requires a combined and concerted effort between complementary medicine practitioner organisations and complementary medicine educational institutions

As stated in this thesis, the question of regulation of CM practitioners is dependent on CM practitioners developing a greater awareness of the New Zealand healthcare system. As outlined in chapter 2, CM in New Zealand has been marginalised over its history from the 19th century through to recent times (Dew, 2003). Such marginalisation potentially leads to poorer health outcomes, often due to a lack of coordination (about patient healthcare management) between CM and CHC health professionals. The resistance to regulation among CHC practitioners in New Zealand (Poynton et al., 2006; Stapleton et al., 2015; Upsdell & Jaye, 2011) may be as a result of a lack of information about CM among CHC practitioners (Bocock et al., 2011). Potentially, communication networks between CM practitioner organisations, CM educational institutions and CHC practitioners could help create greater understanding across the healthcare professions, possibly facilitated by integrative medical groups, such as the Australasian Integrative Medical Association (2021).

9.3.2 Implications of the thesis findings for policy makers

This thesis has identified that CM practitioners self-report their ability to contribute to New Zealand Government health goals which, within New Zealand, healthcare policy over the past decade, have been framed as specific health targets (Ministry of Health - Manatu Hauora, 2019), within the New Zealand Health Strategy (Minister of Health, 2016a). Some of New Zealand Government's strategic objectives are related to health promotion within the general population. One of the health objectives identified by the New Zealand Government is *raising healthy kids* (Ministry of Health - Manatu Hauora, 2020). With 26% of New Zealanders being under the age of 18 years in 2015 (Blaiklock & Kiro, 2015) this is a critical focus area in New Zealand healthcare policy and provision. Paediatric use of CM was high (70%) in a survey conducted in Christchurch, New Zealand (n=100, RR 92%) across GP

clinics and a paediatric diabetes clinic (Wilson et al., 2007), indicating a potential role for CM in helping children to either regain or maintain health. CM use by Australian children has been identified in several studies, with high use by children who are gastroenterology patients (Wadhera et al., 2011), Australian children with asthma (Shenfield et al., 2002) and the general population (Smith & Eckert, 2006). Utilisation of CM practitioners in the area of paediatric health promotion, as well as the clinical treatment of children, in New Zealand could decrease the economic and social burden of disease in children in New Zealand, particularly childhood respiratory conditions. Respiratory conditions place a disproportionate burden on the New Zealand healthcare system and is an area where nutritional guidance (an area many CM practitioners are qualified to provide advice) could prove beneficial (Grant et al., 2011). For instance, naturopaths are well-placed to assess nutritional deficiencies in children (Paxton, 2015; Porcino et al., 2017), including respiratory conditions (Cannone, 2015; Casteleijn & Finney-Brown, 2017). Complementary practitioners may also play other roles in New Zealand national health goals. For instance, naturopaths in the United States have played a role in advocating for vaccines among vaccine-hesitant patients (Garofalo et al., 2020), demonstrating that there could be value in utilising some CM practitioners in prevention programmes in mainstream healthcare in New Zealand.

Policy setting in New Zealand healthcare has not really included CM practitioners[56], or considered the role that CM practitioners might play in disease prevention and health promotion. The lack of participation of CM practitioners in health promotion programmes indicates that their underutilisation in these areas could be a missed opportunity for those that set objectives and policy for healthcare in New Zealand.

New Zealand has some critical public health issues that require urgent attention. Whilst New Zealand has been recognised for having a health system that generally performs well, it has

[56] Apart from regulation of chiropractic and osteopathy (Pollock, 2018c).

the third highest obesity rate in the world and one of the highest rates of chronic obstructive pulmonary disease. It is also reported that the population has unmet health needs due to cost, with household spending on health low (Organisation for Economic Co-operation and Development, 2017). Health policy in New Zealand is beginning to include wider appreciation of the determinants of health (Ministry of Health Manatu Hauora, 2021; National Advisory Committee on Health and Disability, 1998; Simpson et al., 2016), a concept of health that has been appreciated within naturopathic traditions for centuries (Zeff et al., 2013). As far back as 2001 there have been calls for traditional medicine and CM to be part of an essential national health research strategy in all countries (Bodeker et al., 2001). This would require public health resources to be allocated to research into the value and worth that CM could bring to New Zealand.

From 2007-2014 non-communicable disease accounted for 37.7% of all healthcare events in New Zealand, but accounted for 77% of expenditure (Blakely et al., 2019). The burden of chronic non-communicable disease has been identified by World Health Organisation as an area of healthcare that is eminently suited to being addressed (at least in some way) by CM, with social, cultural and economic benefits (World Health Organisation, 2013). If funding could be allocated to small health promotion projects (with both clinical and educational aspects) run by CM practitioners, there is potential for healthcare budget savings for both New Zealand individuals and the New Zealand government public health funding. Potentially health promotion programmes could be established by CM organisations and educational providers. Such programmes might have to be privately funded initially, until such time as programme evaluation is conducted. This may allow the value and worth of such programmes to be established, demonstrating alignment of such programmes (involving CM practitioners) with the New Zealand national health strategy.

The New Zealand Health Research Strategy (Ministry of Business Innovation and Employment, 2017) has as its overarching vision for health research:

> *"By 2027, New Zealand will have a world-leading health research and innovation system that, through excellent research, improves the health and wellbeing of all New Zealanders."* (Ministry of Business Innovation and Employment)

Given the use of, and participation in, CM by a significant portion of the population, it would seem that CM researchers should be involved in research that meets some of the goals of the New Zealand Health Strategy (Minister of Health, 2016a), particularly in the area of maintaining and promoting healthy lifestyles, but also in the management of chronic, non-communicable conditions. As has been demonstrated in Australia (Adams, 2013; Steel et al., 2014) there is great potential in various types of research involving CM, particularly in the field of health services research.

9.3.3 Implications of the thesis findings for integrative health care providers

Integrative health care is still developing in New Zealand, but there are several innovative clinics that have been established (Advanced Natural Medicine, 2021; Helios Health, 2021; Holistic Medical Centre, 2021; Integrated Health Care, 2021; Motherwell Holistic Health, 2021; Te Ora, 2021). Such clinics may play an important role in the overall use of CM and IHC for contributing to the health promotion goals of the New Zealand Health Strategy (Minister of Health, 2016a). The case for IHC to play an important role in disease prevention and health promotion is being established (Ali & Katz, 2015; Arnon et al., 2018; Rakel & Jonas, 2012; Vinjamury et al., 2019).

Based on searches for published studies, research within IHC centres in New Zealand appears to be non-existent, indicating an important gap in information as to how IHC in New Zealand can be appraised, especially as regards the contribution of IHC to the overall health of New

Zealanders. This thesis has highlighted several important areas related to IHC, mainly referrals and referral processes. There is a need to investigate referrals between CM practitioners and CHC practitioners within IHC centres and networks, as well as referrals that occur outside of IHC practitioner networks and institutes.

9.3.4 Implications of the thesis findings for patients and general population of New Zealand

At present users of CM in New Zealand, whilst having access to CM treatment, generally utilise CM alongside CHC (see chapter 2, section 3.8.2.4) (Bennett et al., 2009; Chrystal et al., 2003; Evans et al., 2008; Holt & Gilbey, 2009; Nicholson, 2006; Pledger et al., 2010; Trevena & Reeder, 2005). Many CM users believe that CM should be integrated with mainstream healthcare (Chan & Whitehead, 2008). The establishment of strong evidence base to CM and regulation of CM practitioners have been shown in this thesis to be factors in the integration of CM into the New Zealand healthcare mainstream. With most CM practitioners surveyed in this thesis supporting regulation and integration, as well as referring patients regularly to CHC, patients who desire to have CM treatment, alongside CHC may well benefit from progress towards integration of CM with mainstream healthcare. The results of this thesis may contribute to such integration.

This thesis' findings show that most CM practitioners are underutilised within the New Zealand healthcare system (see section 9.1.5.1.2 of this chapter). What this may mean is that access to quality CM healthcare is limited for New Zealand healthcare users. Figures for use of CM practitioners in New Zealand are lacking. The latest information available is from the 2006/2007 New Zealand Health Survey. Findings from the survey show that 18.2% (CI 17.3-19.1) New Zealand adults, 18 years old and above, used a CM practitioner in the 12 months previous to the survey data collection date (Ministry of Health, 2008). The reason for the non-inclusion of CM into more recent New Zealand Healthcare surveys is not known to the

author of this thesis. More recent data is available from Australia, where 36% of Australia adults (18 years old and above) were found to utilise a CM practitioner in a cross-sectional survey conducted in 2018 (Steel, McIntyre, et al., 2018). With at least 1/5th of New Zealanders utilising CM practitioners there is a need to update the data on CM practitioner utilisation, along with more in-depth research into facilitators and barriers (such as cost, accessibility and user attitudes) to CM practitioner use in New Zealand as well as further investigation of the role of CM products and other services that are part of New Zealanders' healthcare choices. The New Zealand Ministry of Health could be lobbied to reintroduce CM use back into the New Zealand Health Survey.

9.4 Limitations of the research

While this thesis has provided useful information about CM practitioner practices and perceptions, some limitations should be acknowledged, within health services research and the design of the study.

9.4.1 Methods used in the thesis

This thesis draws on quantitative data from a survey. Whilst this has provided useful information about CM practice in New Zealand, it has not explored the reason behind the CM practitioners' perceptions and practices.

9.4.2 Limited scope of the study

This thesis studies the populations of naturopaths and medical herbalists, homeopaths and massage therapists only. The results presented in this thesis may not be representative of other professionalised CM disciplines, such as Traditional Chinese Medicine, hypnotherapy osteopathy or chiropractic, or those CM disciplines that are less represented in the spectrum of CM practice in New Zealand. The findings for the naturopath and medical herbalist,

homeopath and massage therapist respondents in this study may be more applicable to these CM disciplines only.

9.4.3 Response rate

The response rate of 32% of the study population surveyed may indicate an under representation of CM practitioners in the disciplines of naturopathy/herbal medicine, homeopathy and massage therapy. In the methods section of this thesis (4.3.1 Recruitment of respondents) a description of the recruitment process outlines the steps that were made to increase the response rate, with the data collection period extended from three months to nine months and with regular reminders regarding the survey directed to the target study population. The regular reminders resulted in an increased response rate of 32% which, while still low, improved the generalisability of the results, allowing for meaningful conclusions to be drawn.

This response rate is similar to that achieved in a number of CM practitioner studies, and is a higher response rate than that achieved in other CM practitioner studies. For example, Goetz, Kattge, & Steinhäuser, (2017b) surveyed job satisfaction in naturopathic practitioners in Germany (n=332), with a response rate of 29.4%. A cross-sectional survey of three CM professions in Canada (n=833) achieved a response rate of 23.3% (Ijaz et al., 2021), whilst Aucoin, et.al. (2019) surveyed naturopathic practitioners with a special interest in research in Canada, with a response rate of less than 10% (n=201), Psihogios, Ennis &. Seely (2019) conducted a survey of ninety-nine naturopathic physicians practising oncology in the US, achieving a response rate of 22.1%. Meanwhile, a cross-sectional study in Australia, investigated naturopaths', nutritionists' and herbal medicine practitioners' clinical experience of intestinal permeability (n=227), resulting in a 15.9% response rate. ((Leech, Schloss, & Steel 2018b). Not all CM practitioner studies have low response rates, with some CM practitioner studies having a higher response rate than this thesis. A study of response rates for chiropractor surveys (n=79 studies) found a mean 52.7% response rate (Russell, et.al, 2004), and a survey of massage therapists in New Zealand (n=66) had a response rate of 71.7%. The 9-month data collection (with several reminders) for this thesis may have contributed to a response rate that is better

than many other studies in the field, but the online data collection method of the thesis may have inhibited potential respondents.

9.4.4 Selection bias

The CM practitioners surveyed for this thesis were sampled through a convenience sampling method, in that only CM practitioners from CM practitioner organisations that were registered with the two umbrella registering bodies in New Zealand – The New Zealand Natural Health Council and the New Zealand Charter of Natural Health Practitioners. As such, the CM practitioners represented in the survey may have views that support the aspirations of their respective organisations (such as support for regulation and integration), whereas those CM practitioners who do not belong to these organisations may have opposing views. The perceptions presented here may not be representative of all CM practitioners in New Zealand. Selection bias may also mean that some of the practices in the findings of this thesis may not be representative of non-registered CM practitioners in New Zealand.

9.4.5 Recall bias

Because the data resulting from this thesis has been collected from a survey, several biases may have resulted from the utilisation of this method. The survey relied on the CM practitioners self-reporting both their practice characteristics, as well as their perceptions. For many reasons, the CM practitioner respondents may have misrepresented the nature of their practices or their opinions. Recall bias is very common in surveys, and this is no different for studies in healthcare using health services research (Althubaiti, 2016). As the survey was primarily a cross-sectional analysis of the CM practitioners' current practices the risk of recall bias was deemed to be low (Godlonton et al., 2018), but it may still have been possible.

9.4.6 Questionnaire design

There are some factors about the survey for this thesis that may have affected the results being representative of CM practitioners in New Zealand. The survey was conducted using on-line software. Whilst utilisation of on-line platforms for surveys are becoming more common in recent times, there are several pitfalls that may have affected the representativeness of the results. The CM practitioners' (Minister of Health, 2016a) technological ability may have provided a barrier to their participation (Evans & Mathur, 2005). Response rates have been shown to be affected by the utilisation of electronic means of collecting data (Nulty, 2008).

The survey contained 65 questions. This may have taxed the CM practitioner respondents as it took an average of 45 minutes for the testers to complete. Survey length is often an factor in the accuracy and completion in health services research (Revilla & Ochoa, 2017). The scope of the survey questions was wide-ranging across several domains. Whilst this scope resulted in a more complete picture of CM practitioners' practices and perceptions, the wide-ranging set of questions may also have resulted in the CM practitioners not being able to recall accurately, rush the answers to the questions or become fatigued while completing the survey (Chudoba, 2021).

9.5 Strengths of the research

This thesis is the most comprehensive study of CM practitioners in New Zealand to date. Prior to the development of this thesis only one study with CM practitioners in New Zealand had been conducted (with massage therapists). Whilst the massage practitioner study explored similar areas (such as practice characteristics, referrals, practitioner profiles and workloads) it did not investigate practitioner perceptions of research and evidence-based practice, regulation of CM practitioners or integration. Whilst data for the percentage of massage therapists referring to a wide variety of healthcare practitioners and services was

presented in this study of massage practitioners, numbers of patients being referred and referral methods were not explored (Smith et al., 2011b).

This thesis provides a landscape overview of CM practitioners practices and perceptions, presenting important information about CM practices in New Zealand. It is wide-ranging in its scope, covering three CM disciplines (naturopathy/ herbal medicine, homeopathy and massage therapy), with a response rate that provides data that is able to be analysed to provide useful information for CM practitioner organisations, educational institutions and health policy.

The findings in this thesis provide information about CM practice in New Zealand that has not been researched prior to this study, particularly in the areas of New Zealand CM practitioner attitudes to research and knowledge translation (from research) into CM practices, attitudes to integration and regulation, as well as the CM practitioners' alignment to national health goals.

This thesis findings have the potential to provide base data from which several in-depth studies may be conducted in the future. Because this thesis was by publication, the papers that have been published have already been cited in several published studies about CM.

9.6 Future research directions

In summary, fig. 9.1 shows that from the intersection of CM practitioner educational qualifications, CM practitioner regulation and evidence for CM practice. The critical questions that arise from these intersections that this thesis highlights could guide future research.

9.6.1 The intersection of education and evidence-based practice

Figure 9.1 depicts the intersection between CM practitioner education and evidence for CM practice. Some questions that arise from this intersection are:

- Are effective methods for developing EBP or EIP in New Zealand CM practitioners being included in CM education?
- Are evidence-based diagnostic/assessment methods and outcome measures being taught in CM education in New Zealand?

As identified in this chapter, CM education has a major influence on CM practice, attitudes of CM practitioners and ultimately, regulation and integration of CM into mainstream healthcare. The link between EBP and education has been explored in this thesis, but factors such as the role of CM education curricula in fostering EBP, and EBP modelling by tutors, are areas that could potentially be studied in some depth. Educational evaluations, utilising mixed methodologies, could offer greater insights and findings that could lead to useful outcomes for CM practitioners to be better equipped to practice in an evidence-informed manner, particularly in the areas of assessment of patient conditions and measuring patient outcomes. A longitudinal study of students, from enrolment, through to graduation and beyond into practice would also be useful as an investigative instrument for understanding how CM students and CM practitioners utilise knowledge translation to develop skills and attitudes in clinical practice.

9.6.2 The intersection of regulation and evidence-based practice

Figure 9.1 depicts the intersection between evidence for CM practice and CM practitioner regulation. Some questions that arise from this intersection are:

- What level or type of evidence is to be considered for regulation of CM practitioners to be implemented?
- Will guidelines be required for CM practice?

The role of EBP and education in the professions' applications for regulation is an area that requires more clarity. Investigating this area could contribute to greater understanding of viewpoints, challenges, barriers and facilitators to regulation of selected CM professions and, potentially, integration of those professions into mainstream healthcare. It may be that an investigation, utilising mixed-method research tools, into the above factors could provide greater understanding and help the CM practitioner organisations to better engage with health bureaucracy to influence policy and chart a path to regulation and integration. Potentially the regulation of CM professions may require the development of practice guidelines for CM practice. The content and shape of such guidelines may need to be determined through a process of review (including systematic reviews) and consultation (Delphi groups or similar).

9.6.3 The intersection of complementary medicine education and complementary medicine practitioner regulation

Figure 9.1 depicts the intersection between evidence for CM education and CM practitioner regulation. The questions that arise from this intersection are:

- What minimum level of education of CM practitioners is required for statutory regulation?
- What competencies are required for CM practitioners to be regulated in New Zealand?

The minimum level of CM education for CM practitioner regulation could be investigated, using evaluation of education levels required (for regulation) of other professions and regulatory requirements in other countries. The competencies required for regulation of CM practitioners could be set after in-depth investigation of regulatory frameworks (for CM) internationally.

9.6.3 The intersections of complementary medicine education, evidence for complementary medicine practice, and regulation of complementary medicine practitioners with integrative healthcare

Fig 9.1 shows respective intersections between three major areas of findings of this thesis, but it also depicts an intersection of these facets into the centre, which represents integration of CM practice into mainstream healthcare in New Zealand. The questions that arise from these intersections are:

- In education in New Zealand are CM practitioners being prepared to integrate and/or interface with national health care systems?
- Is evidence the major facilitator to integration of CM with mainstream healthcare in New Zealand?
- Will regulation of CM practitioners facilitate integration of CM into mainstream healthcare in New Zealand?

These questions may well be answered, at least in part, by the aforementioned possibilities for further research. The questions that this thesis has investigated could well be studied in a similar survey to the one that produced the findings for this thesis, to create currency of the findings, prior to further research into the above questions.

9.6.4 Research into referrals occurring between complementary medicine and conventional health care

Alongside of the research areas identified (arising from the questions raised by the intersections of the aspects identified in Fig. 9.1, a further critical area of CM practice that this thesis highlights is referrals between CM practitioners and CHC practitioners. Greater understanding of why practitioners refer, what method of referrals are utilised, and how patients are followed up as to the benefits and/or drawbacks of being referred between CM and CHC, would provide valuable information to several organisations and policy makers.

Questionnaires of patients and practitioners could be useful instruments to conduct such research, but also documentary analysis of patient records, with qualitative interviews of patients and practitioners, could give greater insight into why referrals occur, what was the experience of patients during the process, and how referral processes could be improved.

The areas for future investigation of CM practice in New Zealand, through the utilisation of health services research methods, outlined in this chapter could provide further understanding of CM in New Zealand. This thesis has provided a good overview of CM practices and perceptions in New Zealand, but it really has supplied a launching pad for future studies that could uncover information that could be applied to allow CM to be better understood and recognised as a useful addition to mainstream healthcare in New Zealand.

Chapter 10 Conclusion

This thesis has examined the characteristics of CM practice in New Zealand using a health services research approach across three CM disciplines and a range of important issues. The scope and subjects of this thesis have not been explored in New Zealand prior to this study.

The use of a health services approach to examine practices and perceptions of CM practitioners is an appropriate method to answer the research questions this thesis poses. This health services research approach has allowed an examination of CM practice across a broad range of topics, so that a portrait of CM practice could be developed to ensure that critical areas can be further examined. This examination has fulfilled the purpose of the thesis, which is to gain an understanding of CM practice within the New Zealand health system. In fulfilling this purpose this thesis also provides indications of both the value of CM to New Zealand healthcare and the future position that CM might hold in a more integrative spectrum of mainstream healthcare provision.

Initially, the survey results provided a comprehensive picture of the nature of CM practices, with regard to a range of aspects such as caseload and consultation length, allowing for comparisons to be made with other healthcare practitioners. The study then examined important issues in CM provision, particularly in the interaction of CM practitioners with CHC and allied health practitioners, as well as other CM practices. This information provides insight as to how the current interaction (particularly referral numbers and referral mechanisms), of the CM practitioner respondents in this study with CHC practitioners, occurs and on what scale. Such information is useful to CM practitioner organisations and educators, as well as CHC practitioners and healthcare policy developers.

There is a need to follow this study with more in-depth analysis of this area of referral between practitioners to gauge the level of safety (to the public) and effectiveness inherent in

the (currently) loose system of patient referral between CM and CHC practices. This a matter of concern that should be addressed by further exploration with both CM and CHC practitioners, as well as patients.

The area of evidence-based practice and research attitudes and practices among New Zealand CM practitioners is another area of concern. Examining this area in more depth, with a focus on how the CM practitioners' attitudes and behaviours are determined by their knowledge and understanding of useful and applicable evidence to determine their approaches to healthcare, and what tools are required to develop an applicable evidence basis for CM clinical decision making, is a task for CM educators, CM practitioner organisations and those delivering CM healthcare.

Regulation of CM practitioners was a major section of this thesis and is also a major concern for CM practitioners and their respective professional organisations. With many CM disciplines in New Zealand considering this question seriously, an examination of the areas that might support the regulation of selected CM practitioners, such as those argued by this thesis (particularly: safety and effectiveness of CM practices in relation to interaction between CM and CHC practitioners; evidence for CM approaches and practices and levels of education required for regulated CM practitioners), needs to be undertaken as a matter of priority. The value of this study as a foundation for such examination has been established within this thesis.

Potentially, the results found in this thesis could further the progression of an integrative framework for healthcare in New Zealand, where patients can move seamlessly between CHC and CM practices. However, much more understanding of how such an integrative healthcare system might be developed requires substantial further research that could support

the evidence base, the regulatory agenda and structure, and the willing participation of CM and CHC practitioners, to realise such an integrative future for New Zealand healthcare.

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Appendices

Appendix 1 - Survey Protocol: developed as part of the ethics application to NZ Health and Disability Commission Ethics Committee

Title of the study: -

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals Survey

Background: -

In New Zealand, Complementary and Alternative Medicine (CAM) services are provided by CAM practitioners and by some mainstream health professionals such as doctors or nurses. There is sparse empirical evidence available about the use of complementary and alternative medicines (CAM) in New Zealand (Wilson, Dowson et al. 2007), however there are a greater number of newly published papers in CAM area from an international perspective. With the limited available knowledge on the prevalence of CAM use in New Zealand, there is an exponential growth in the use and practice of CAM in recent years, which has fuelled a drive in CAM education providers to advance the evidence-base for these therapies to allow consumers to make informed choices about their health. Typically CAM research has focused on efficacy, mechanisms of action and safety of herbal and Chinese medicines through the use of randomised controlled trials and related methodologies and designs. This is undoubtedly an essential, worthwhile pursuit, and it is true that much further work in this area is still needed. Nevertheless, in order to completely understand CAM we must broaden the approach beyond simply asking questions of clinical effectiveness, to include methods and research perspectives from neighbouring traditions such as the public health (research that focuses upon a community self-care, CAM use and wider population based health issues) and health services research (research that focuses upon investigating CAM and integrative

services and the systems in which they are provided). It is essential that we examine the economic, political, social and cultural contexts of contemporary CAM in order to help inform and direct consumers, practitioners (both CAM and GPs), health care managers, Governments and health policy-makers in their decision making, behaviours and interventions (Adams 2008).

In 2002/2003 there was a National health Survey conducted by Ministry of Health to understand health service use amongst users of CAM from 12,529 respondents, aged 15 years and over, who were living in a private dwelling in New Zealand. The survey over-sampled Maori, Pacific and Asian Peoples and used a complex method of sampling, however the survey has been weighted to produce a representative sample. Respondents were asked a range of questions about their health, including the SF36 questionnaire health service use, risk factors, including the AUDIT questionnaire on alcohol use, and sociodemographic factors. They were also asked about their use of a range of complementary or alternative health services and were then asked to nominate any that hadn't been covered. Based on this survey the proportion of New Zealand people using a CAM service over a twelve month period was 23.4%. The most cited reasons for using CAM services were mainly i) that they had a condition that other health providers couldn't treat, 53%; ii) they were referred by friends and family, 29.2%; iii) they required specialist services, 12.5%; iv) 12.0% of people, a GP referred them. Respondents who used CAM services were asked if they had seen a GP about the same condition and 33.4% said they had (Pledger, Cumming et al. 2010).

Another explorative, multiple case-study by Massey University (Chan and Whitehead 2008), where in-depth, semi-structured interviews were employed revealed that participants would continue to utilize CAM, even where CAM had no scientific evidence. The participants believed that CAM should be integrated into mainstream healthcare service delivery

(Conventional Medicine, CM). The reasons for seeking CAM therapies were noted as participants turned to CAM because they believed CM had limitations. CM was felt to provide a degree of relief but not improve overall health. Participants did acknowledge, however, that CM held an important position, as it gave quick relief of symptoms, saved life in life-threatening situations and was diagnostic-focused. Participants also stated that they used CAM as a substitute for pharmaceutical drugs and other invasive CM procedures considered harmful. CAM, therefore, was seen as a long-term means of maintaining overall health. Participants perceived their quality of life had been improved by using CAM.

In 2004, the Ministerial Advisory Committee on Complementary and Alternative Health (MACCAH) had submitted an advice report to Ministry of Health (MOH) in which they have emphasized on the public demand for using CAM health care which they funded themselves, however it was not possible to quantify the contribution that the CAM sector contributed towards MOH health strategy goals. Protection of consumers was highlighted and public submissions favoured regulation of CAM practitioners (either voluntary or statutory). MACCAH recommended statutory regulation for high risk CAM modality practitioners, and self-regulation for low risk CAM modality practitioners. The MACCAH report also noted that evidence of safety, efficacy and cost effectiveness of CAM therapies was required, although such investigation was occurring overseas. A requirement to build infrastructure for CAM research was identified and included: building research capacity, research networks between CAM community and research experts, appropriate methodologies, dissemination of research findings and funding (MACCAH 2004).

With the available New Zealand based literature, for the past two decades there has been an increasing development and demand for integrative health care (IHC) services with a combination of conventional plus CAM treatments in New Zealand, but the selection of these

health services are either by self-choice or GPs referrals. However there is no study available on CAM practitioners or professionals in order to understand their attitudes and beliefs towards this integration and to provide comprehensive evidence based approach to natural health and healing. This has prompted the need for regular assessment of patient-centered outcomes also to understand the CAM practitioners to assess the value of such Integrative health care (IHC) models in New Zealand. To better understand the attitudes, beliefs and practices of CAM practitioners in New Zealand in regard to CAM practice, integrative medicine, CAM research, CAM regulation and the part that CAM contributes towards the national health strategy objectives, we have created this online survey for those in CAM profession.

Purpose of the Survey:

This anonymous NZCAM Survey is to learn useful facts about the attitudes, beliefs and practices of CAM practitioners in New Zealand in regard to CAM practice, Integrative medicine, CAM research, CAM regulation and the part that CAM contributes towards the national health strategy objectives.

Design: -

This is an exploratory, correlational study design to examine relationships between factors relevant to some of the issues discussed above. For this purpose, a CAM professionals survey was designed to measure the familiarity with and the attitudes toward the ideas of integrative health care, CAM regulation, government funding, etc. The survey was reviewed by a number of CAM professionals and practitioners before the final version was completed. The survey included six sections; (1) a Demographics Section but also with some general questions on their modalities and specialities, (2) a Professional qualification Section asking about their CAM qualifications and challenges, (3) an CAM Research Section to understand

their attitudes on CAM research (4) an Integrative Medicine Practice Section, to understand their attitudes on integrative health care (5) a Registration/Funding Section, to get responses on current and future CAM status (6) Role of CAM in NZ Health Strategy, to understand the role of CAM health care in improving outcomes in the priority areas signalled by the New Zealand health strategy.

Benefits of the Survey:

Participation in this survey will contribute to the knowledge of CAM practice in New Zealand and the possible facilitation of CAM development within NZ health care system. It will provide an increased awareness of current referral practices between health care professionals in New Zealand and in turn will assist CAM clinical practice. The outcomes of this survey may identify some requirements to build infrastructure for CAM research and research capacity which in turn may create possibilities for attracting funding for practice and research.

Risks or discomforts:

Participation is voluntary. No risks or discomforts are anticipated from taking part in this survey. If participants feel uncomfortable with any question, they can skip that question or withdraw from the survey altogether. If they decide to quit at any time before they have finished the questionnaire, their answers will NOT be recorded.

Confidentiality:

All responses will be kept completely confidential. We will NOT know participants IP address when they respond to the Internet survey so it is completely anonymous. Only the investigators will see individual survey responses and the results will be reported by content analysis. We maintain strict confidentiality of the information that will be entered in this

survey. Data will be kept with a RESTRICTED ACCESS on Survey Monkey server and treated as “Highly Confidential”.

Data preparation and collection: -

We also will ask for some demographic information (e.g., age, gender, and ethnicity) so that we can accurately describe the general traits of the group of CAM practitioners who participate in this survey. This anonymous online survey will take 45-60 minutes to complete. This questionnnaire will be introduced through participants’ own CAM professional association or body so that we can restrict unwanted participation.

Analysis: -

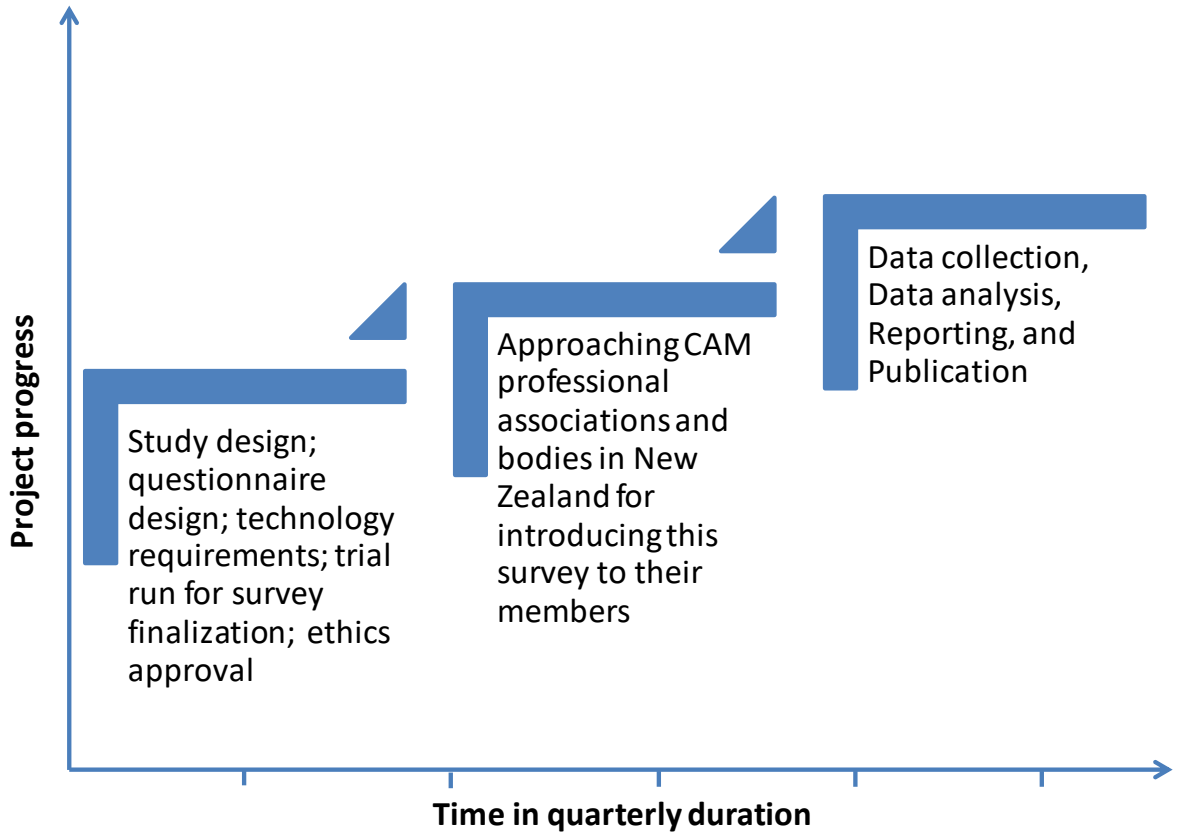
After we have finished the data collection, the data will be analysed and presented under group analysis.

Reporting: -

The results from the survey will be presented in educational settings and at professional conferences, and the results might be published in a professional journal in the field of CAM and Health disciplines.

Schedule: -

We are planning to keep this survey active for 4 months for data collection and then will follow the data analysis and reporting. The following schematic pert chart will explain the steps:



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Appendix 2 – letter and information supplied to complementary medicine practitioner organisations requesting assistance with recruitment

22 April 2011

To

Executive Member

Affiliate organisation

Natural Health Council (Inc.).

Dear *Natural Health Council Affiliate member,*

Recently we held initial discussions with the Natural Health Council in regard the research project titled “Mapping the Natural Health Landscape” that we wish to undertake. As a result of this meeting your association has been contacted as an affiliate member of the Natural

Health Council to receive this letter and to request your support in helping to collect this important information from the 'Complementary and Alternative Medicine' (CAM) health sector. Our request of you is that:

1. You provide the exact number of professional members of your association to us for allocation of member codes. This survey is anonymous so we do not require member names just your number of practising members (not student members)
2. You allocate the member code and survey link to each of your individual members so that they can access the survey
3. Can you advise the educational institutions and colleges that are accredited by your association to deliver the qualifications enabling graduates to join your association.
4. Could you also send a list of the qualifications (from the above institutions) that your endorse and their credit value (or hours of delivery)

The first two points relate directly to the requirement we have to quantify participant response to this survey. The latter two points we expect will assist us in analysis and discussion of data.

This study is being undertaken by the New Zealand Colleges of Complementary Medicine Consortia (NZCCMC) as a follow up to the Ministerial Advisory Committee on Complementary and Alternative Health (MACCAH) report (2004). This investigation is by way of an online survey aimed at 'Complementary and Alternative Medicine' (CAM) professionals who are members of major professional New Zealand CAM bodies. The purpose of this research project is to better understand CAM professional attitudes and beliefs held about CAM practice, integrative medicine, CAM research and CAM regulation. The breadth of CAM practices, level of education of CAM practitioners and CAM practitioners' contribution towards the National Health Strategy objectives will also be investigated.

Participation by your members in this survey will contribute to the knowledge of CAM practice and the nature of the contribution that CAM makes to NZ Health care. The findings of this research could contribute towards national and international alliances, lobbying of

agencies for professional recognition, employment opportunities and medical insurance coverage. It will also identify the areas for further development of CAM education by NZ CAM education providers and will provide CAM practitioners and associations with a greater depth of understanding about their profession. This survey will provide an increased awareness of current referral practices between health care professionals in New Zealand and in turn will assist CAM clinical practice. The outcomes of this survey may identify some requirements to build infrastructure for CAM research and research capacity which in turn may create possibilities for attracting funding for practice

and research. This survey will also provide understanding of CAM practitioners attitudes about professional regulation.

Participation of your members is voluntary and anonymous. No risks or discomforts are anticipated from taking part in this survey. This survey takes approximately 30 min to complete. In order to provide an accurate percentage response rate for this survey while maintaining anonymity we will need to provide your association with participation codes which you will allocate and distribute to your members. These codes will be allocated based on your professional membership numbers and we would require that the participation code and survey link be passed on to your individual members so that they can take this survey.

There will be an opportunity for you to discuss any questions you have with one of the research team members by telephone or through e-mail. However, if your organisation do not wish to take this survey, please inform us so that we will not disturb you in future.

Thank you for taking the time to read this letter. We look forward to hearing from you.

Yours sincerely,

Phillip Cottingham

Principal

Wellpark College of Natural

Therapies

Auckland

I am interested in participating in the study and would like to receive my participation code: Reply with

Yes/No

Appendix 3 Background document to the survey developed to provide information about the survey to complementary medicine practitioner organisations

Background to this survey "Mapping the Natural Health Landscape"

This study is being undertaken by the New Zealand Colleges of Complementary Medicine Consortia (NZCCMC) as a follow up to the Ministry of Health (MOH) National Health Survey 2002/2003, the Ministerial Advisory Committee on Complementary and Alternative Health (MACCAH) report (2004) and the MOH NZ Health Survey 2006/2007.

The MOH National Health Survey (2002/2003) found that 23.4% of New Zealand adults aged 15 years and older used CAM services in the previous 12 month period. Most cited reasons for CAM use by participants (population size: 12,529 people) were:

- Had a condition that they perceived other health providers couldn't treat (53%)
- Were referred by friends and family (29.2%)
- Required specialist services (12.5%)
- G.P. referral (12%)

In 33.4% of participants the G.P. had seen the condition before using CAM services.

The MOH NZ Health Survey 2006/2007 confirmed that 1 in 5 adults accessed a CAM health care worker in the previous 12 months. Women (22.3%) were significantly more likely to use CAM compared with men (14.1%).

In 2004, the MACCAH report recommended:

- Quantification of the contribution of CAM sector towards MOH strategy goals was required.
- Evidence of safety, efficacy and cost effectiveness of CAM therapies is required in NZ
- Statutory regulation for high risk CAM modality practitioners and self regulation for low risk CAM modality practitioners
- A requirement to build infrastructure for CAM research:
    - building research capacity
    - creating research networks between CAM community and research experts
    - appropriate methodologies
    - dissemination of research findings
    - research funding etc.

The above research tells us that CAM practitioner consultation is an acceptable and viable health choice in NZ and as such makes a considerable contribution to the health of the NZ population. CAM is currently self funded or minimally funded by some health insurance policies.

Should CAM be considered more seriously in terms of employment/funding within the NZ health care system and research funding? To enable such developments CAM practitioner research is required and forms the background to the driving force behind this research initiative.

This study is being undertaken by the New Zealand Colleges of Complementary Medicine Consortia (NZCCMC) and is by way of an online survey aimed at 'Complementary and Alternative Medicine' (CAM) professionals who are members of major professional New Zealand CAM bodies. The purpose of this research project is to better understand CAM professional attitudes and beliefs held about CAM practice, integrative medicine, CAM research and CAM regulation. The breadth of CAM practices, level of education of CAM practitioners and CAM practitioners' contribution towards the National Health Strategy objectives will also be investigated.

Participation in this survey will contribute to the knowledge of CAM practice and the nature of the contribution that CAM makes to NZ Health care. The findings of this research will provide CAM practitioners and associations with a greater depth of understanding about their profession; it could contribute towards employment opportunities and medical insurance coverage, lobbying of agencies for professional recognition, national and international alliances. It will also identify the areas for further development of CAM education. This survey will provide an increased awareness of current referral practices between health care professionals in New Zealand and in turn will assist CAM clinical practice. The outcomes of this survey may identify some requirements to build infrastructure for CAM research and research capacity which in turn may create possibilities to attract funding for practice and research. This survey will also provide understanding of CAM practitioners attitudes about professional or self regulation.

Participation is voluntary and anonymous. No risks or discomforts are anticipated from taking part in this survey. This survey takes approximately 30 - 45 min to complete.

There will be an opportunity for you to discuss any questions you have with one of the research team members by telephone or through e-mail.

Appendix 4 – Mapping the natural health landscape survey instrument

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

1. Background:

TO ALL PARTICIPANTS :

Over the last two decades there has been an increasing development in CAM health care services in New Zealand and requirements to provide comprehensive evidence based approach to health and healing. This has resulted in need for assessment of CAM treatment, inclusion of research methods in CAM education and the development of clinical outcome measures that are patient-centered. There is also a need to better understand the attitudes and beliefs that CAM practitioners hold in regard to: the value of research to CAM practice, regulation and integrative medicine.

In 2004, the Ministry of Health (MOH) Ministerial Advisory Committee on Complementary and Alternative Health (MACCAH) released the 'Complementary and Alternative Health Care in N.Z.' report providing information and advice to the Minister of Health on CAM health care in New Zealand. The MACCAH report recognised that the public were using CAM health care which they funded themselves, however it was not possible to quantify the contribution that the CAM sector contributed towards MOH health strategy goals. Protection of consumers was highlighted and public submissions favoured regulation of CAM practitioners (either voluntary or statutory). MACCAH recommended statutory regulation for high risk CAM modality practitioners, and self-regulation for low risk CAM modality practitioners. The MACCAH report also noted that evidence of safety, efficacy and cost effectiveness of CAM therapies was required, although such investigation was occurring overseas. A requirement to build infrastructure for CAM research was identified and included: building research capacity, research networks between CAM community and research experts, appropriate methodologies, dissemination of research findings and funding.

PURPOSE OF THE SURVEY:

This anonymous NZCAM Survey is to learn useful facts about the attitudes, beliefs and practices of CAM practitioners in New Zealand in regard to CAM practice, Integrative medicine, CAM research, CAM regulation and the part that CAM contributes towards the national health strategy objectives. We the New Zealand Colleges of Complementary Medicine Consortia (NZCCMC), have created this online survey for those in CAM professions.

Page 1

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

2. Informed Consent

What will be done:

This anonymous survey will take 45-60 minutes to complete. The survey includes questions about your professional qualifications, CAM employment history, specialities/modalities practiced, your attitudes/beliefs held in regard to CAM research, integration and registration. Other survey questions will address your perceptions on access to funding and the role of CAM in New Zealand's Health Strategy. We also will ask for some demographic information (e.g., age, gender, and ethnicity) so that we can accurately describe the general traits of the group of CAM practitioners who participate in this survey. After we have finished data collection, the data will be analysed and presented under group analysis.

PLEASE SUBMIT ONLY ONE SURVEY PER PERSON TO ENSURE ACCURACY OF ANALYSIS.

Benefits of the Survey:

Participation in this survey will contribute to the knowledge of CAM practice in New Zealand and the possible facilitation of CAM development within NZ health care system. It will provide an increased awareness of current referral practices between health care professionals in New Zealand and in turn will assist your clinical practice. The outcomes of this survey may identify some requirements to build infrastructure for CAM research and research capacity which in turn may create possibilities for attracting funding for practice and research.

Risks or discomforts:

Your participation is voluntary. No risks or discomforts are anticipated from taking part in this survey. If you feel uncomfortable with a question, you can skip that question or withdraw from the survey altogether. If you decide to quit at any time before you have finished the questionnaire, your answers will NOT be recorded. If you get disconnected or have to leave the survey temporarily, you can re-connect and continue later from where you left off (if it is from the same computer).

Confidentiality:

Your responses will be kept completely confidential. We will NOT know your IP address when you respond to the Internet survey. Only the researchers will see your individual survey responses and the results of our content analysis of your answers. We assure you that we maintain strict confidentiality of the information that will be entered in this survey. Data will be kept with a RESTRICTED ACCESS on Survey Monkey server and treated as "Highly Confidential".

How the findings will be used:

The results from the survey will be presented in educational settings and at professional conferences, and the results might be published in a professional journal in the field of CAM and Health disciplines.

Contact information:

If you have concerns or questions about this survey, please contact:
Dr Ram Vempati --- researchleader@wellpark.co.nz or
Jill Dunn --- jilld@massagecollege.ac.nz

By beginning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Thank you for your participation,
Research Team, NZCCMC

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

3. General Questions

1. Demographics:

	Age	Gender
Demographics		

2. Ethnicity

- ◯ NZ European
- ◯ Cook Islands Maori
- ◯ Chinese
- ◯ Maori
- ◯ Tongan
- ◯ Indian
- ◯ Samoan
- ◯ Niuean
- ◯ Other

Other / Iwi, please specify (optional)

3. Quantify the following CAM related occupations in terms of average number of hours of your time allocation per week:

	No. of Hours
Total average hours worked per week:	
Administrator	
Clinic Manager	
Consultant	
Education Manager/Dean	
Education Director/President/Principal	
Practitioner	
Researcher	
Manufacturing/Sales representative for CAM products	
Health Shop/Chemist	
Teaching (Faculty)	
CAM related trainings (Seminars/Conferences/Professional development courses/Workshops, etc.)	
Other (CAM related)	
Other (Non-CAM related)	

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

4. Location (region) in New Zealand

- ☐ Northland
- ☐ Auckland
- ☐ Waikato
- ☐ Bay of Plenty
- ☐ Gisborne
- ☐ Hawke's Bay
- ☐ Taranaki
- ☐ Manawatu-Wanganui
- ☐ Wellington
- ☐ Tasman
- ☐ Nelson
- ☐ Marlborough
- ☐ West Coast
- ☐ Canterbury
- ☐ Otago
- ☐ Southland

5. Which of the following best describes the location of your main CAM practice:

- ☐ Urban - City
- ☐ Urban - Town
- ☐ Rural

6. Is your main Clinical practice/CAM activity:

- ☐ Based in your home
- ☐ Mobile
- ☐ Professional room
- ☐ Community Centre
- ☐ Education establishment
- ☐ Sports Centre
- ☐ Hospital
- ☐ Medical Centre
- ☐ Health Food Store
- ☐ Pharmacy
- ☐ Over the counter
- ☐ Other
- ☐ Not applicable

Other (please explain)

7. Which one of the following describes your main practice:

- ☐ Solo Clinic
- ☐ CAM Multi-disciplinary Clinic
- ☐ Allied-Health Clinic (eg. Chiropractic, Osteopath, Physiotherapist, Midwifery)
- ☐ Other
- ☐ Not applicable

Other (please explain)

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

8. Professional experience in number of years and months (actual time worked):

	Engagement	Years	Months
Practice			
Administration in CAM related establishments/organisations			
Management in CAM related establishments/organisations			
Teaching in Universities			
Teaching in CAM educational establishments			
CAM Research in Universities/Institutions			
Other Research in Universities/Institutions			
Individual Research Projects			
Government Agency			
CAM products manufacturing Industry - Retail			
CAM products manufacturing Industry - Other			
Pharmaceutical industry - Retail			
Pharmaceutical industry - Other			
Organising CAM related Seminars/Workshops/Conferences/Retreats			
Professional Association (Executive/Committee)			
Other Business (CAM related)			

Total number of years of CAM experience (in years and months):

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

9. What are your modalities of practice?

- ☐ Alexander technique
- ☐ Aromatherapy
- ☐ Ayurveda
- ☐ Bioelectromagnetic-based therapies
- ☐ Biological therapies
- ☐ Chi kung
- ☐ Chiropractic
- ☐ EFT - Emotional Freedom Therapy
- ☐ Electro-Homeopathy
- ☐ Herbal medicine
- ☐ Homeobotanical therapy
- ☐ Homoeopathy
- ☐ Hypnotherapy
- ☐ Music Therapy
- ☐ Naturopathy
- ☐ Neurolinguistic programming
- ☐ Nutritional counselling
- ☐ Nutritional supplementation
- ☐ Osteopathy
- ☐ Rebirthing
- ☐ Reiki
- ☐ Relaxation Massage
- ☐ Spiritual healing
- ☐ Sports Massage
- ☐ Therapeutic Massage
- ☐ Traditional Chinese medicine
- ☐ Traditional Maori Healing practices
- ☐ Traditional Pacific Healing practices
- ☐ Yoga or Yoga therapy

Other (please specify)

10. Modalities/Specialities:

	Modality 1	Modality 2
In the last 2 years, which two have been your main modalities?		

Other (please specify)

11. Which one of the following is most representative of your practice:

- ☐ Specialised (e.g. Women's fertility, Children etc.)
- ☐ Multi-modality (e.g. Massage + Herbal medicine; Homeopathy + Nutrition)
- ☐ Holistic (Mind,Body and Spirit)
- ☐ Maori Healing practices (Tinana, Hinengaro, Wairua, Whanau, and Te Taiao)
- ☐ Not applicable

Please explain:

12. Average caseload (one-on-one) per month:

New clients

Follow-ups

13. List the medical conditions that you can most effectively treat or manage at your clinic or organisation under the 4 categories listed below (as applicable):

A) Reverse progression of medical condition	
B) Halt/Slow/Manage progression of medical condition	
C) Palliative care (make comfortable)	
D) Supportive treatment	

14. Average time (in minutes) of

Initial consultation (including treatment):	
Follow-ups:	

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

4. Professional qualification

(*)This question is mandatory.

*** 15. Your professional qualification(s):**

- [ ] Acupuncture
- [ ] Aromatherapy
- [ ] Ayurveda
- [ ] Chiropractic
- [ ] Dietitics
- [ ] Doctor of Medicine / GP
- [ ] Energy Healer
- [ ] Health Sciences (CAM)
- [ ] Herbal Medicine
- [ ] Homeopathy
- [ ] Maori Healing
- [ ] Massage
- [ ] Midwifery
- [ ] Naturopathy
- [ ] Nursing
- [ ] Nutrition - Conventional Degree
- [ ] Nutrition - Diploma
- [ ] Osteopathy
- [ ] Physiotherapy
- [ ] Reflexology
- [ ] Science (e.g. Zoology, Chemistry, Physics)
- [ ] Traditional Chinese Medicine
- [ ] Yoga

Any other (please specify)

*** 16. Your highest level of academic qualification relevant to CAM discipline?**

- [ ] Doctoral
- [ ] Masters
- [ ] Postgraduate Diploma
- [ ] Postgraduate Certificate
- [ ] Bachelors Degree
- [ ] Advanced Diploma
- [ ] Diploma
- [ ] Certificate
- [ ] None

Other (please specify)

17. After your formal education in CAM, did you have any form of clinical apprenticeship/internship under the supervision of an experienced practitioner?

- ◯ Yes
- ◯ No
- ◯ Not applicable

18. When starting practice or CAM related work did you experience any 'gaps' in your education?

- ◯ Yes
- ◯ No

If you answered yes please describe those 'gaps' and what suggestions would you make as to how these gaps can be bridged?

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

19. What challenges did you face in establishing your practice after your formal education in CAM disciplines:

- ☐ Financial
- ☐ Management
- ☐ Marketing
- ☐ Peer support
- ☐ Association support
- ☐ Meeting local by-laws
- ☐ Insufficient networks
- ☐ Insufficient knowledge/training
- ☐ Not applicable

Please explain:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

5. CAM Research

(*)This question is mandatory.

20. What is your perception of CAM research?

- [ ] Useful for public to understand the benefits of CAM
- [ ] Useful for GPs/Other health professionals to understand the role of CAM in health care
- [ ] Provide scientific evidence for what I do as a therapist
- [ ] No use at all

Any other, please explain:

21. What value do you place on research in your profession?

	No value at all	-2	-1	Neutral	+1	+2	Highly important
Respond on this scale:	○	○	○	○	○	○	○

22. What impact does evidence from research have on your practice?

- ○ High impact
- ○ Moderate impact
- ○ Mild Impact
- ○ No impact at all
- ○ Not applicable

Please describe how research impacts your practice, if any

23. How do you determine the effect of your treatments?

- [ ] Client reported change of symptoms
- [ ] Quantifiable measurement of change using measuring tools (QOL questionnaires, ROM, VAS etc.)
- [ ] Improvements in blood tests and other medical parameters
- [ ] CAM relevant traditional methods (such as Live Blood Analysis, Iris-diagnosis, Pulse diagnosis etc.)

Please describe other

24. Do you have sufficient research skills to interpret/conduct research in your clinic/organisation?

	Answer
Interpreting Research content	
Conducting Research	

If yes, please specify:

25. Do you or your institution have links with other academic institutions or universities for conducting research?

- ◯ Yes
- ◯ No

If yes, please explain:

26. In your opinion should there be a National CAM Research Unit available in New Zealand for guidance in research?

- ◯ Yes
- ◯ No
- ◯ Don't know

27. If you answered 'yes' to the previous question, what type of guidance in research is required:

- ☐ Collaborative Projects
- ☐ Developing study protocols / study designs
- ☐ Ethical approval guidance
- ☐ Funding support
- ☐ Networking for collaborative projects
- ☐ Project governance/management
- ☐ Publication guidance
- ☐ Research methodology guidance

Other (please specify)

28. Do you keep yourself up-to-date with research findings?

- ◯ Yes
- ◯ Partially
- ◯ No

29. If answered 'Yes' or 'Partially' to the previous question from where do you access research material?

- [ ] Association Journals
- [ ] Association meetings
- [ ] Attending manufacturer's/supplier's seminars
- [ ] Attending Scientific presentations
- [ ] Google Search Engine Web articles
- [ ] Health Specific Magazines
- [ ] International Conferences
- [ ] Journal Club
- [ ] News Articles
- [ ] News letters from manufacturers and suppliers
- [ ] Non-electronic Journals
- [ ] Online Scientific Journals
- [ ] Peer reviewed scholarly journals
- [ ] Research Club
- [ ] Trade Journals

Other (please specify)

30. If answered 'No' to Q.28, please select the most appropriate reason from below:

- [ ] Inaccesibility to database access
- [ ] Insufficient time
- [ ] Not important for CAM practice
- [ ] Financial restraints
- [ ] Insufficient skills to read/understand research papers

Other (please specify)

*** 31. Are you aware of the National Centre for Adverse Reaction Monitoring (CARM) for reporting adverse reaction to your treatment?**

- ◯ Yes
- ◯ No

If 'yes' have you made any reports previously, if so please give number:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

6. Integrative Medicine Practice

The terms "integrative" or "integrated" medicine indicate combinations of conventional and complementary / alternative medical treatments in the same medical practice/institution.

(*)This question is mandatory.

*** 32. Should CAM practitioners integrate with the following main stream / primary health care practitioners?**

	Strongly Disagree	-2	-1	Neutral	+1	+2	Strongly Agree
GPs	○	○	○	○	○	○	○
Specialists	○	○	○	○	○	○	○
Physiotherapists	○	○	○	○	○	○	○
Midwives	○	○	○	○	○	○	○
Nurses	○	○	○	○	○	○	○
Dietitians	○	○	○	○	○	○	○
Clinical Psychologists	○	○	○	○	○	○	○

Please explain your answer:

33. What do you perceive to be the benefits of integration to your CAM profession?

34. How many referrals DO YOU MAKE to Primary Health Care practitioners?

	Number of referrals per year
GPs	
Specialists	
Physiotherapists	
Nurses	
Midwives	
Dietitians	
Clinical Psychologists	
Other	

If you answered 'Other' please define:

35. How are these referrals made?

- ☐ Referral letter
- ☐ Telephone referral
- ☐ Practitioner to Client word of mouth recommendation
- ☐ E-mail referral

If multiple options, please explain:

36. How many referrals DO YOU MAKE to the CAM / Allied health practitioners listed below:

	Referrals per annum
Acupuncturists	
Aromatherapists	
Ayurveda practitioners	
Chiropractors	
Counselors / Psychotherapists	
Energy Healers	
Exercise Physiologists	
Homeopaths	
Hypnotherapists	
Maori Healers	
Massage therapists	
Medical Herbalists	
Naturopaths	
Osteopaths	
Pilates instructor	
Reflexologists	
Traditional Chinese Medicine Practitioners	
Yoga therapists	

Any other practitioners (give a number of annual referrals):

37. How are these referrals made?

- ☐ Referral letter
- ☐ Telephone referral
- ☐ Practitioner to Client word of mouth recommendation
- ☐ E-mail referral

If multiple options, please explain:

38. How many referrals DO YOU GET from Primary Health Care practitioners?

	Number of referrals per year
GPs	
Specialists	
Physiotherapists	
Nurses	
Midwives	
Dietitians	
Clinical Psychologists	
Other	
Not applicable	

If you answered 'Other' please define:

39. How are these referrals made?

- ☐ Referral letter
- ☐ Telephone referral
- ☐ Practitioner to Client word of mouth recommendation
- ☐ E-mail referral

If multiple options, please explain:

40. How many referrals DO YOU GET from the other CAM / Allied health practitioners listed below:

	Referrals per annum
Acupuncturists	
Aromatherapists	
Ayurveda practitioners	
Chiropractors	
Counselors / Psychotherapists	
Energy Healers	
Exercise Physiologists	
Homeopaths	
Hypnotherapists	
Maori Healers	
Massage therapists	
Medical Herbalists	
Naturopaths	
Osteopaths	
Pilates instructors	
Reflexologists	
Traditional Chinese Medicine Practitioners	
Yoga therapists	

Any other practitioners (give a number of annual referrals):

41. How are these referrals made?

- ☐ Referral letter
- ☐ Telephone referral
- ☐ Practitioner to Client word of mouth recommendation
- ☐ E-mail referral

If multiple options, please explain:

42. What types of conditions do you refer to primary health care practitioners?

- [ ] Conditions outside my scope of practice
- [ ] Conditions too severe for me to deal with
- [ ] Conditions that my training did not cover
- [ ] Conditions with which I have not had good success
- [ ] Conditions that are more suited to other treatments
- [ ] Conditions that have not responded to current CAM treatment
- [ ] Due to recognition of early warning signs that requires further investigation
- [ ] For medical diagnosis of condition
- [ ] To gain clearance or rule out contraindication for CAM treatment
- [ ] Not applicable

Other (please explain)

43. What types of conditions do you refer to CAM or Allied health practitioners (eg. chiropractors, osteopaths)?

- [ ] Conditions outside my scope of practice
- [ ] Conditions with which I have limited experience
- [ ] Conditions too severe for me to deal with
- [ ] Conditions that my training did not cover
- [ ] Conditions with which I have not had good success
- [ ] Conditions that are more suited to other treatments
- [ ] Speciality area of another practitioner
- [ ] Client request
- [ ] Not applicable

Other (please explain)

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

44. Do you believe primary health care practitioners should be allowed to practice CAM therapies with relevant training?

	Yes, with complete formal education or training in CAM modality	Yes, with some short-term practical training or workshops in CAM modality	No	I don't know
GPs	◯	◯	◯	◯
Specialists	◯	◯	◯	◯
Physiotherapists	◯	◯	◯	◯
Nurses	◯	◯	◯	◯
Midwives	◯	◯	◯	◯
Dietitians	◯	◯	◯	◯
Clinical Psychologists	◯	◯	◯	◯

Please explain your answers, if possible

45. Do you believe integration is very important in today's health care scenario in NZ?

	Not important	-2	-1	Neutral (0)	+1	+2	Very important
Respond on this scale:	◯	◯	◯	◯	◯	◯	◯

Any comments please:

46. Do you believe your professional organisation is committed to integration?

◯ Yes ◯ No ◯ Don't know

47. Identify case history taking methods used in your clinic / institute:

	What type do you use?	How often do you use?	Who collects?	Type of archives?
Case History Notes:				

Any additional comments

48. Do you use electronic medical records in your clinic/institute?

	Select your answer from below
How useful do you find this method?	

If you use any electronic records, please mention which type:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

*** 49. If you had access to the patient's database/client forms handled by GPs, which component of the information below would be most useful to your professional practice?**

	No use at all	-2	-1	Neutral	+1	+2	Very useful
Medical diagnosis	◯	◯	◯	◯	◯	◯	◯
Medical history	◯	◯	◯	◯	◯	◯	◯
Prescribed medication	◯	◯	◯	◯	◯	◯	◯
Surgical history	◯	◯	◯	◯	◯	◯	◯
Diagnostic tests (e.g. blood tests, X-ray reports etc.)	◯	◯	◯	◯	◯	◯	◯
Immunisation history	◯	◯	◯	◯	◯	◯	◯
Other	◯	◯	◯	◯	◯	◯	◯

Other, please specify:

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MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

7. Registration/Funding

(*)This question is mandatory.

*** 50. Are you a member of a professional CAM association?**

- ◯ Yes
- ◯ No

If 'yes' name the society/association (name in full) / If 'no' please explain:

51. Do you think all practitioners from your modality should be registered?

	Your choice	If 'yes' what type?
Practice Registration:		

Any other, please explain:

52. What type of funding should CAM professionals receive?

- ◯ Government
- ◯ Private (e.g. health insurance)
- ◯ Combination of Govt/Private
- ◯ Don't know
- ◯ No funding

Please explain:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

53. Which of the following CAM / Allied health professionals (eg. chiropractors, osteopaths) in your opinion should receive funding?

- ☐ Acupuncturists
- ☐ Aromatherapists
- ☐ Ayurveda practitioners
- ☐ Chiropractors
- ☐ Counselors
- ☐ Psychotherapists
- ☐ Pacific Healers
- ☐ Energy Healers
- ☐ Homeopaths
- ☐ Hypnotherapists
- ☐ Maori Healers
- ☐ Massage therapists
- ☐ Music therapists
- ☐ Naturopaths
- ☐ Nutritionists
- ☐ Osteopaths
- ☐ Reflexologists
- ☐ Western medical herbalists
- ☐ Yoga therapists
- ☐ Dont' know
- ☐ None of these

Please explain what type of funding:

54. In your opinion, should CAM products receive government subsidy?

- ◯ Yes
- ◯ No
- ◯ Don't know

If 'yes' please explain which products:

55. Do you have any compensation structure (from the Government or Insurance companies) for your paid health services?

- ◯ Yes
- ◯ No

If 'yes' please specify

56. Do you have professional indemnity insurance?

- ◯ Yes
- ◯ No

Please specify:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

8. Role of CAM in NZ Health Strategy

We wish to understand the role of CAM health care in improving outcomes in the priority areas signalled by the New Zealand health strategy.

57. Which of the following Ministry of Health (MOH) objectives do you actively discuss in your CAM consultation:

- [ ] reducing smoking
- [ ] improving nutrition
- [ ] reducing obesity
- [ ] increasing the level of physical activity
- [ ] reducing the rates of suicides and suicide attempts
- [ ] minimising harm caused by alcohol and illicit and other drug use to individuals and the community
- [ ] reducing the incidence and the impact of cancer
- [ ] reducing the incidence and the impact of cardiovascular disease
- [ ] reducing the incidence and the impact of diabetes
- [ ] improving oral health
- [ ] reducing violence in interpersonal relationships, families, schools and communities
- [ ] improving the health status of people with severe mental illness
- [ ] ensuring access to appropriate child health care services, including well child and family care and immunisation

58. Which of the following Ministry of Health services do you utilise in your CAM practice, if any?

- [ ] Health education pamphlets
- [ ] Health services pamphlets
- [ ] Medsafe electronic medicine data sheets
- [ ] Primary Health Organisation education seminars
- [ ] Other

Other (please specify)

59. Are you offering CAM services in any of the following Ministry of Health community health services programmes:

- [ ] Whānau Ora
- [ ] Beat Diabetes
- [ ] Green Prescription
- [ ] Healthy Eating and Health Action
- [ ] Fall Prevention
- [ ] Slip, Slop, Slap and Wrap
- [ ] Five Plus Healthy Eating
- [ ] Community Education programmes
- [ ] Other
- [ ] Not applicable

Please explain your active involvement:

MAPPING THE NATURAL HEALTH LANDSCAPE - CAM Professionals

9. Final Remarks

60. Do you have any recommendations/suggestions/concerns to raise with the government in relation to CAM:

- ◯ Yes
- ◯ No
- ◯ Don't know

If 'yes' please explain

61. What is important for the future of CAM professions in New Zealand?

- ☐ National Register of qualified CAM practitioners
- ☐ Develop relationships between NZ & AUS professional associations
- ☐ Integrate CAM into NZ Health Care System
- ☐ Develop CAM research capability (skills & networks) by CAM professionals
- ☐ Develop a peer-reviewed CAM journal
- ☐ Cross-disciplinary training (eg. Public Health)
- ☐ Common strategies by Professional Associations for the development of CAM services in NZ
- ☐ Improve access to private health funding
- ☐ Higher Degree programmes related to CAM
- ☐ Statutory Registration (eg. Nurses)

Other (please specify)

62. Is there anything else you would like to comment on in regard to CAM in New Zealand?

Appendix 5 – Ethics approval

Monday, 11 August 2014

Dear Applicant

Thank you for your response to the Committee's comments for your project titled, "It's all about the patient: An investigation of the role of professional communication in the current practice of integrative healthcare". Your response satisfactorily addresses the concerns and questions raised by the Committee who agreed that the application now meets the requirements of the NHMRC National Statement on Ethical Conduct in Human Research (2007). I am pleased to inform you that ethics approval is now granted.

Your approval number is UTS HREC REF NO. 2013000183 Your approval is valid five years from the date of this email.

Please note that the ethical conduct of research is an on-going process. The National Statement on Ethical Conduct in Research Involving Humans requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

You should consider this your official letter of approval. If you require a hardcopy please contact Research.Ethics@uts.edu.au.

To access this application, please follow the URLs below:
* if accessing within the UTS network: http://rmprod.itd.uts.edu.au/RMENet/HOM001N.aspx
* if accessing outside of UTS network: https://remote.uts.edu.au , and click on "RMENet - ResearchMaster Enterprise" after logging in.

We value your feedback on the online ethics process. If you would like to provide feedback please go to: http://surveys.uts.edu.au/surveys/onlineethics/index.cfm

If you have any queries about your ethics approval, or require any amendments to your research in the future, please do not hesitate to contact Research.Ethics@uts.edu.au.

Yours sincerely,

Professor Marion Haas
Chairperson
UTS Human Research Ethics Committee

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CB01.14.08.04

Ref: E11

Authors note: the title of the thesis was changed with approval from

Appendix 6 – Manuscript associated with results reported in chapter 5

Cottingham et al. BMC Complementary and Alternative Medicine (2015) 15:114
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BMC Complementary & Alternative Medicine

RESEARCH ARTICLE Open Access

The characteristics, experiences and perceptions of naturopathic and herbal medicine practitioners: results from a national survey in New Zealand

Phillip Cottingham[1*], Jon Adams[2], Ram Vempati[1], Jill Dunn[1] and David Sibbritt[2]

Abstract

Background: Despite the popularity of naturopathic and herbal medicine in New Zealand there remains limited data on New Zealand-based naturopathic and herbal medicine practice.
In response, this paper reports findings from the first national survey examining the characteristics, perceptions and experiences of New Zealand-based naturopaths and herbal medicine practitioners across multiple domains relating to their role and practice.

Methods: An online survey (covering 6 domains: demographics; practice characteristics; research; integrative practice; regulation and funding; contribution to national health objectives) was administered to naturopaths and herbal medicine practitioners. From a total of 338 naturopaths and herbal medicine practitioners, 107 responded providing a response rate of 32%. Data were statistically analysed using STATA.

Results: A majority of the naturopaths and herbal medicine practitioners surveyed were female (91%), and aged between 45 and 54 years. Most practiced part-time (64%), with practitioner caseloads averaging 8 new clients and over 20 follow-up clients per month.
Our analysis shows that researched information impacts upon and is useful for naturopaths and herbal medicine practitioners to validate their practices.
However, the sources of researched information utilised by New Zealand naturopaths and herbal medicine practitioners remain variable, with many sources beyond publications in peer-reviewed journals being utilised. Most naturopathic and herbal medicine practitioners (82%) supported registration, with statutory registration being favoured (75%). Integration with conventional care was considered desirable by the majority of naturopaths and herbal medicine practitioners surveyed (83%).
Naturopaths and herbal medicine practitioners feel that they contribute to several key national health objectives, including: improved nutrition (93%); increased physical activity (85%); reducing incidence and impact of CVD (79%); reducing incidence and impact of cancer (68%).

Conclusions: There is a need for greater understanding and communication between practitioners of conventional care and naturopathic and herbal medicine which could support informed, coordinated and effective health provision within the New Zealand health care system. There is a need for further in-depth research examining naturopaths and herbal medicine practitioners' perceptions and practices, to provide insights of benefit to all those practising and managing health services as well as those directing health policy in New Zealand.

Keywords: Naturopathy, Herbal medicine, National survey, Perceptions, Practice characteristics, Integrative practice, Referrals

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Background: naturopathy and herbal medicine in New Zealand

There has been a worldwide increase in complementary and alternative medicine (CAM) use [1-3]. The most recent data from New Zealand (NZ) reports that in the twelve months prior to October 2006 at least 1 in 5 adults visited a CAM practitioner [4]. Naturopathic and herbal medicine practitioners (N/HMPs) constitute a substantial component of CAM health care provision in NZ [5]. The Natural Health Council [6] and Natural Health Practitioners [7] hold voluntary registers in naturopathy/herbal medicine (N/HM) and data from the 2006 Census [8] shows that naturopathic medicine makes up 0.6% of the NZ healthcare workforce (no separate census data is available for HMPs, who are combined with other complementary practitioners). These census results show that the total NZ CAM workforce is 2,055 [8], with naturopathic medicine constituting 21% of this workforce.

N/HM exist predominantly outside publically funded health care and beyond the practices of the conventional medical profession in NZ [9]. CAM more generally, of which N/HMPs form a substantial component, currently attracts no Government regulation in NZ, despite advice from a ministerial committee [10]. A 2006 survey of NZ GPs showed that the rate of referral from GPs to naturopaths was 12.3% and the rate of referral from GPs to HMPs was 9.7%. However, this same 2006 study also identified the GPs opinions about the benefit of N/HM was 33% and 27.7% respectively [11].

Practices and perceptions of naturopathic and herbal medicine practitioners in Australasia

Some research, undertaken outside NZ, has examined the practices and perceptions of N/HMPs. An Australian survey of N/HMPs found that while 76% of practitioners had undergraduate or post-graduate qualifications, only 29% sourced information from peer reviewed scientific journals [12]. Another study of N/HMPs in Australia found that most of their patients (74%) were self-referred (word of mouth) and that most N/HMPs surveyed practiced part-time with mean clinical hours of 23.8 per week [13].

In North America NM practice patterns have been studied, finding that NMPs saw, on average, 31.6 patients per week; with 70% ordering diagnostic and screening tests [14]. Another study investigated NMs practitioner's relationship with conventional care, with 22% in frequent communication with primary care physicians and 30% reporting lack of cooperation, leading to lack of access to medical records. This study also reports on NMs experience with scientific research, with 30% indicating they have coordinated or conducted research [15].

Yet, to date, the characteristics, perceptions and experiences of N/HMPs in NZ remain beyond empirical investigation. Such research can offer important information necessary to help those providing and managing health practices and developing health care policy, to ensure safe, effective and coordinated patient care for all New Zealanders. In response to this significant research gap, this paper reports findings from the first cross-sectional survey examining the characteristics, experiences and perceptions of N/HMPs in NZ. These descriptive data reveal information about the additions N/HMPs make to the healthcare workforce. Such research could provide background information for further studies that could effectively respond to the call from the NZ Ministerial Advisory Committee of Complementary and Alternative Health that there is a need for "quality, unbiased information on the safety and efficacy of CAM modalities, and for further work to be done to identify and address consumers' needs for information about the practice of CAM in NZ" [10].

Methods

A survey was administered to a range of CAM practitioners (including N/HMPs, homeopaths, massage therapists plus others) in NZ to examine their characteristics, perceptions and experiences relating to a range of key issues. This paper reports the analysis relating to the responses of the N/HMPs in the survey.

The study utilised an on-line survey via Survey Monkey. The survey was structured around seven domains: demographic practitioner data; practice and referral characteristics; academic qualifications; perceptions and experiences regarding research, integration and registration and alignment to the NZ health strategy [16]. Ethics approval was granted by the Ministry of Health (MoH) National Ethics Advisory Northern A committee and the Human Research Ethics Committee, University of Technology Sydney, Australia. Informed consent was implied by participation as per the NZ National Ethics Committee Guidelines [17].

National sample of CAM practitioners

Participants were recruited through the two main registering bodies for CAM practitioners in New Zealand: the Natural Health Council and the Charter of Health Practitioners (now Natural Health Practitioners NZ). This recruitment method is similar to that employed in other surveys of naturopathic and herbal medicine practitioners [12,14,18]. Both registering bodies agreed to administer the survey via their affiliated associations, ($n = 338$ for N/HMP associations). Upon receiving the association membership figures, each association was allocated specific codes (to avoid duplicate responses). These codes were subsequently allocated to individual members by their own associations, along with the web address of the survey, ensuring anonymity of the respondents. As not all NZ naturopaths identified in the census [8] are registered with an association, the percentages

used in the analysis were only calculated for practitioners who received an invitation to complete the survey. This does not represent the sum total of NZ naturopaths.

Survey measures

The survey examined demographic data, specifically age, gender, ethnicity and practice location identified by NZ District Health Board (DHB), and whether the N/HMPs' practice was in a city, urban or rural location(s). Practitioner characteristics examined in the study were: average caseloads, years of professional experience, highest level of qualification and attitudes to research. The survey also asked about the N/HMPs' attitudes to integration and N/HMPs' modes and rates of referral to a range of conventional health care practices. N/HMPs were asked whether they considered that they should be registered and whether that registration should be statutory or voluntary. This section also included questions on whether N/HMPs should receive Government or private funding (or a combination of both) as well as their own use of indemnity insurance schemes. The survey also included a question examining N/HMPs perceptions of their alignment to the public health goals stated in NZ Health Strategy [16].

Analysis

Initial descriptive analysis was undertaken for all responses using means and standard deviations or frequencies and percentages where appropriate. A chi-square test was used to examine the association between two categorical variables and a Student's t-test was used to test for differences between means across a binary variable. A p-value of <0.05 was set to indicate statistical significance. All analyses were undertaken using STATA software. Data for referrals were analysed using 5 or less as the first category, and then 6 or more for the second for pragmatic reasons.

Results

A total of 107 N/HMPs responded to the survey representing a response rate of 32% for these modalities. Most participants were female (91%) and a significant portion of participants were aged 45 to 54 years (38%), with only 12% aged 35 years or younger. Most practitioners (53%) had an undergraduate or postgraduate degree (in a related discipline), with their base N/HM qualification predominantly at a Diploma or Advanced Diploma level (82%)[a]. Modalities (other than naturopathy and herbal medicine) practiced included: nutritional supplementation (71%); nutritional counselling (63%); relaxation massage (35%); therapeutic massage (29%); homeopathy (19%); aromatherapy (14%) and spiritual healing (9%).

Practice characteristics

Clinical practice and practice management constituted the majority of professional hours spent per week (mean = 15 hours) by the N/HMPs, followed by: manufacturing and retail-related tasks (mean = 9 hours); education-related tasks (mean = 3 hours); administration tasks (mean = 3 hours); research (mean = 1 hour); training (mean = 1 hour); and other tasks (mean = 1 hour).

Most N/HMPs self-reported that they were located in urban areas (84%), with practices mainly in solo clinics (56), but also based in multi-disciplinary clinics alongside a range of CAM and non-CAM practitioners (33%) and other types of practices, including health food stores and pharmacies (11%). The majority of the respondents (60%) had more than 10 years of experience in practice. Only 26% of the N/HMPs practiced full-time, with 64% practicing part-time and 10% occasionally. Most practitioners had utilised more than one therapy in their practice (83%), with only 17% specialising in a single therapy or area of practice. The average new-patient caseload (per month) was 8.0 clients, while the average follow-up caseload was 20.3 clients (per month). Consultation length for new patients was reported as 76.2 minutes on average, whereas most follow-up consultations were an average of 37.1 minutes.

Research

Most N/HMPs (80%) perceived research[b] as being useful for validating their practice, with ninety-three per cent placing high value on research, and seventy-eight per cent identifying it as of high or moderate impact on their practice behaviour.

Whilst most N/HMPs (95%) utilised client-reported changes of symptoms as a main measurement of outcome, 60% of respondents employed blood tests and medical parameters, and 38% used other quantifiable measures, such as Health Related Quality of Life, as indicators of therapeutic effectiveness and 33% N/HM specific assessment methods (such as iridology or live blood analysis). Whilst 60% of practitioners agreed they had the skills to identify and analyse published research, and make meaningful clinical decisions based on this source of evidence, 26% identified themselves as having the skills to actually conduct research. Of those N/HMPs who reported that they had no skills in interpreting research, time (38%) and financial restraints (26%) were the main reasons given for this situation. However, only 30% of respondents reported that they remained up-to-date with research findings and only 35% reported using peer-reviewed scientific journals to keep up to date with knowledge in their field. Respondents were asked if they kept up-to-date with research findings and, if they did, where did they access information about research. Of those participants who did access research material, the sources of researched information were as follows: 82% from attending manufacturer's/supplier's seminars; 72% via newsletters from manufacturers and suppliers; 67% via Google search engine web articles;

51% from news articles; 50% via online scientific journals; 49% from health-specific magazines; 43% via association meetings; 35% via peer-reviewed scholarly journals; 20% from attending scientific presentations; 19% from attending international conferences; and 18% via reading trade journals.

No correlation was found between age, years of experience, CAM related activities, case-loads or educational qualification in relation to either using researched information to validate practices or in relation to the impact of research on practice (see Table 1).

Similarly, no correlation was found between skills to either interpret or conduct research and the validation or impact of research upon the N/HMPs' practice (Table 1).

Most N/HMPs (70%) identified a need for a national CAM research unit in NZ, which was seen as a useful development to help provide guidance regarding: funding sources and opportunities (58%); developing study protocols and designs (54%); research methodology (51%); networking (50%); and collaboration (48%).

Regulation and funding

Registration was supported by a significant majority (82%) of N/HMPs. Of the 88 practitioners who favoured some form of registration, 75% were in favour of statutory registration[c] and 25% voluntary registration. No relationship was found between N/HMPs' attitudes to registration and practitioner age ($p = 0.735$), years of experience in practice ($p = 0.239$), or academic qualification ($p = 0.348$) (Table 2).

Most N/HMPs favoured some practice subsidy funding being available, with 69% in favour of a combination of Government and private (insurance) subsidies. Sixty-one per cent of the naturopaths and herbal medicine practitioners had professional indemnity insurance. There was no significant association between funding preference and age ($p = 0.787$), practice years ($p = 0.353$) or academic qualifications ($p = 0.813$) (Table 2).

Integrative practice

Most N/HMPs (83%) favoured integration with conventional care providers. Specifically, the percentage of N/HMPs who agreed that they should integrate with a range of different conventional primary health care practitioners was: 89% with regards to GPs; 87% with regards to specialists; 73% with regards to physiotherapists; 91% with regards to midwives; 82% with regards to nurses; 74% with regards to dietitians; and 81% with regards to clinical psychologists. The average number of referrals per year made by each N/HMP to particular conventional primary health care providers was as follows: 12.0 to GPs (representing 3.3% of annual patient visits) ; 7.1 to specialists (1.9%) ; 7.5 to physiotherapists (2.1%); 7.9 to midwives (2.2%); 4.5 to nurses (1.2%); 7.5 to dietitians (2.1%); and 4.8 to clinical psychologists (1.3%). The average number of referrals per year received by each participant from particular conventional primary health care practitioners was as follows: 10.1 from nurses; 8.7 from midwives; 7.1 from GPs; 5.3 from physiotherapists; 4.7 from clinical psychologists; 3.5 from specialists; and none from dietitians.

The following reasons were given by the N/HMPs as to why they referred to conventional primary health care practitioners: to treat conditions outside their own scope of practice.

Table 1 The association between naturopathic and herbal medicine practitioner characteristics and aspects of research

Practitioner and practice-related characteristics		Using research for validating practice			Research impact on practice		
		Useful (n = 93)	Not useful (n = 2)	p-value	High/Moderate (n = 84)	Low (n = 17)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		11.1 (9.0)	3.5 (3.5)	0.240	2.7 (1.7)	2.9 (1.3)	0.643
Hours spent on CAM-related training		1.5 (1.1)	1.9 (1.6)	0.403	1.4 (1.1)	2.0 (1.8)	0.205
Hours spent on administrative tasks		2.1 (1.6)	1.5 (1.1)	0.181	2.0 (1.5)	2.0 (1.5)	0.644
Average case-Load per month (all)		31.4 (29.6)	32.2 (29.8)	0.908	31.5 (30.5)	26.0 (23.0)	0.488
		%	%		%	%	
Age	**22-44**	36.4	100	0.066	38.1	37.5	0.964
	>44	63.6	0.0		61.9	62.5	
Education diploma		47.3	33.3	0.627	42.9	46.7	0.791
Under-graduate		30.9	40.0		35.7	26.7	
Post-graduate		21.8	26.7		21.4	26.6	
Sufficient skills to conduct research	Yes	37.9	50.0	0. 728	37.5	41.7	0.788
	No	62.1	50.0		62.5	58.3	
Sufficient skills to Yes		58.0	100	0.396	60.7	52.9	0.552
Interpret research No		42.0	0.0		38.3	47.1	

Table 2 The association between naturopathic and herbal medicine practitioner characteristics and aspects of regulation and funding

Practitioner characteristics		In favour of registration			In favour of combined government and private funding		
		Yes (n = 88)	No (n = 19)	p-value	Yes (n = 74)	No (n = 33)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		2.8 (1.7)	2.8 (1.7)	0.239	2.8 (1.6)	2.5 (1.8)	0.353
		%	%		%	%	
Age	22-44	37.9	42.1	0.735	37.8	40.6	0.787
	>44	62.1	57.9		62.2	59.4	
Education							
Diploma		41.9	25.0	0.348	42.9	50.0	0.813
Under-graduate		38.7	25.0		35.7	27.8	
Post-graduate		19.4	50.0		21.4	22.2	

(70%); in recognition of early warning signs that require further investigation (77%); for medical diagnosis of a condition (72%); for conditions that are more suited to other treatments beyond their own (63%); for conditions too severe to deal with (62%); for conditions that have not responded to current naturopathic and herbal medicine treatment (37%); to gain clearance or rule out contraindication for N/HM treatment (37%); for conditions not covered by their own training (33%); and for conditions for which N/HMP had limited success (21%). However, N/HMPs referrals to and from conventional providers were primarily by word of mouth with 85% of referrals to conventional practitioners and 75% of referrals from conventional practitioners being via this method.

Tables 3, 4, 5 and 6 report the relationships between referrals from N/HMPs to selected conventional practitioners and: age; years of experience; average case-loads; and academic qualifications. A significant relationship exists between referrals to specialists and average case-loads (of N/HMPs) per month (p = 0.02), as well as between age and referrals to clinical psychologists (p = 0.062).

A majority of the N/HMPs surveyed (60%) did not utilise electronic medical records/client data sheets in their practice while some (31%) reported using both electronic and paper-based clinical records. Only 4% of the respondents employed a purely electronic medical records/client data system. Respondents were asked what information they would find useful if they had access to patients' medical records. The responses were as follows: prescribed medication (94%); results of diagnostic tests (94%); medical history (90%); surgical information (90%); medical diagnosis (89%); immunisation history (80%).

Contribution to national health objectives

The N/HMPs were asked to assess whether they perceived their practice as being aligned to the NZ Ministry of Health published public health objectives [16]. The areas where the N/HMPs perceived they made their greatest contributions were in: improving nutrition (93%); increasing physical activity (85%); reducing obesity (82%); reducing smoking (79%); reducing the incidence and the impact of CVD (79%); reducing the incidence and the

Table 3 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and GPs

Practitioner and practice-related characteristics		Annual number of referrals made to a GP			Annual number of referrals received from a GP		
		<6 (n = 35)	6 or more (n = 45)	p-value	<6 (n = 37)	6 or more (n = 23)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		12.1 (10.3)	10.1 (8.2)	0.346	2.9 (1.6)	3.3 (1.5)	0.275
Average case-load per month (all)		23.8 (22.6)	39.4 (33.8)	0.025	33.9 (24.4)	41.6 (36.0)	0.298
		%	%		%	%	
Age	22-44	37.1	40.9	0.733	25.0	26.1	0.925
	>44	62.9	59.1		75.0	73.9	
Education							
Diploma		50.0	42.9	0.130	34.5	53.3	0.261
Under-graduate		39.3	25.7		44.8	20.0	
Post-graduate		10.7	31.4		20.7	26.7	

Table 4 The association between practitioner characteristics and referrals made from naturopathic and herbal medicine practitioners to specialists

Practitioner and practice-related characteristics		Annual number of referrals made to a specialist		
		<6 (n = 30)	6 or more (n = 9)	p-value
		Mean (SD)	Mean (SD)	
Years of experience		11.5 (9.4)	8.5 (7.1)	0.413
Average case-load per month (all)		26.6 (19.0)	49.0 (36.1)	0.020
		%	%	
Age	22-44	40.0	37.5	0.898
	>44	60.0	62.5	
Education				
Diploma		45.4	57.1	0.532
Under-graduate		36.4	14.3	
Post-graduate		18.2	28.6	

impact of diabetes (78%); and reducing the incidence and the impact of cancer (68%).

See Figure 1 N/HMPs perceived alignment with NZ national health goals.

Discussion

This paper reports the first in-depth examination of N/HMP practice in NZ. The study identified a number of interesting findings.

Demographics

The results suggest that N/HMPs are predominantly older than 35. This may be a consequence of lack of registration leading to lack of career opportunities, or N/HMP being seen as a 'secondary' occupation by older women mainly.

Integrative practices by N/HMPs

The data in our study suggests that referrals between N/HMPs and conventional care are occurring regularly (albeit on an informal basis). This is similar to referral practices reported between HMPs and conventional care in Australia [18], as well as other countries [19], but there is little data concerning the method of referral internationally or in NZ. The informality of referral mechanisms is highlighted in our survey results. Referral by word of mouth from N/HM to conventional care (and vice versa) is particularly predominant. This is an important area for future research examination, as there is potential, within a purely patient mediated system of referral such as word of mouth, for a lack of information (or misinformation) being communicated by the patient to either practitioner which could compromise safety (particularly in drug-herb or drug-nutrient interactions) and effectiveness (particularly because of the lack of

Table 5 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and physiotherapists

Practitioner and practice-related characteristics		Annual number of referrals made to a physiotherapist			Annual number of referrals received from a physiotherapist		
		<6 (n = 23)	6 or more (n = 6)	p-value	<6 (n = 12)	6 or more (n = 6)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		12.0 (10.2)	5.5 (6.8)	0.160	2.8 (1.8)	3.3 (1.4)	0.559
Average case-load per month (all)		38.7 (29.4)	24.7 (15.1)	0.275	43.1 (23.0)	31.0 (44.9)	0.455
		%	%		%	%	
Age	22-44	34.8	50.0	0.494	50.0	16.7	0.171
	>44	65.2	50.0		50.0	83.3	
Education							
Diploma		50.0	25.0	0.450	42.9	33.3	0.961
Under-graduate		43.8	50.0		28.6	33.3	
Post-graduate		6.2	25.0		28.6	33.4	

Table 6 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Midwives

Practitioner and practice-related characteristics		Annual number of referrals made to a midwife			Annual number of referrals received from a midwife		
		<6 (n = 22)	6 or more (n = 16)	p-value	<6 (n = 20)	6 or more (n = 17)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		12.8 (10.2)	9.8 (7.4)	0.346	2.7 (1.9)	2.9 (1.5)	0.685
Average case-load per month (all)		35.1 (28.8)	36.3(30.7)	0.909	29.0 (27.1)	40.0 (27.4)	0.234
		%	%		%	%	
Age	22-44	29.2	56.3	0.087	30.0	41.2	0.478
	>44	70.8	43.7		70.0	58.8	
Education							
Diploma		41.2	50.0	0.114	40.0	45.4	0.497
Under-graduate		41.2	8.3		40.0	18.2	
Post-graduate		17.6	41.7		20.0	36.4	

access to diagnosis and treatment information between practitioners). However, the prevalence of referral for conditions outside the N/HMPs scope of practice indicates a degree of self-regulation around safety issues in relation to interaction with conventional care. This finding could be confirmed by a more in-depth study of referral perceptions and practices between N/HMPs and GPs. Whilst several important studies have investigated referrals between conventional care and CAM [13,18-26], the method of referral has seldom been identified and described. A study of Australian and NZ acupuncturists has identified word of mouth as the main referral method [25], which is consistent with the findings in our survey. Another NZ study of osteopaths found that referral was primarily facilitated through patient networks, with word of mouth recommendation highly valued [26]. In many

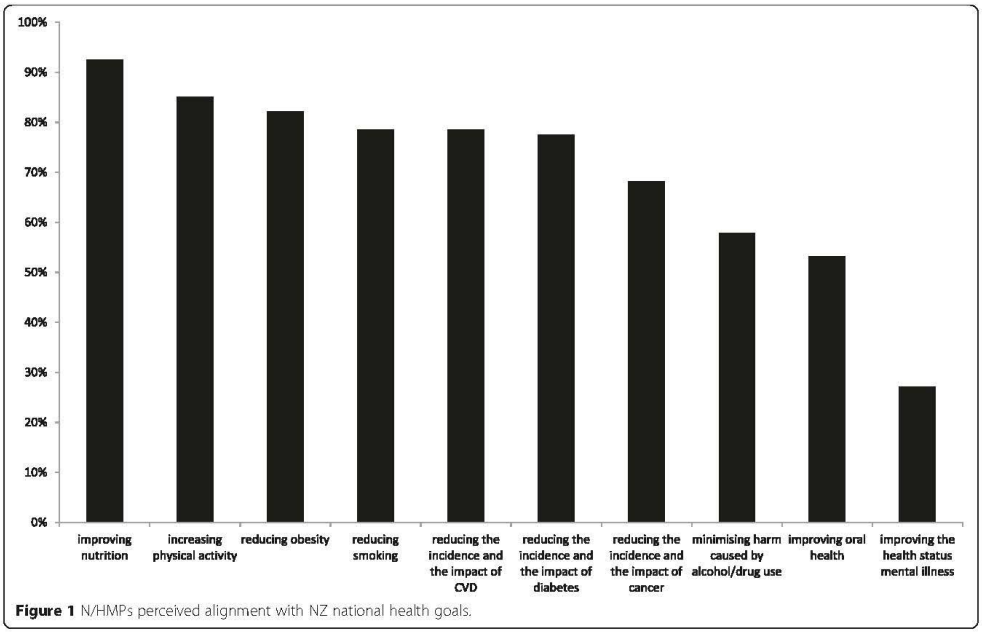

Figure 1 N/HMPs perceived alignment with NZ national health goals.

instances the GP will primarily refer at the request of the patient [20,23,27] despite the reluctance of many patients to discuss CAM options with their GP [20,28].

No statistical correlations were found between N/HMPs referrals to GPs or referrals received by N/HMPs from GPs and age, practice years and academic qualifications (Table 3). Those practitioners with a high monthly case-load made more referrals to GPs ($p = 0.025$) and specialists ($p = 0.020$), compared to those with a low monthly case-load (Tables 3 and 4). The implications of these results for N/HMPs need further investigation, but they may possibly indicate that those N/HMPs' who practice full time have a greater understanding of the need to develop integrative networks with a variety of conventional practitioners.

No statistical correlations were found between referral to other conventional practitioners and age, practice years or academic qualifications (Tables 5, 6 and 7). It is unclear as to whether these referral patterns reflect the attitudes to N/HM from conventional practitioners. An increase in referrals could potentially be facilitated by greater recognition, as lack of statutory registration, in Australia, has been shown to be a hurdle to referrals to CAM practitioners [29].

Registration and regulation

Our study findings showing that practitioners favour registration is not dissimilar from data on N/HMPs' preferences reported in Australia [10]. Most of the practitioners in our study favoured a mix of government and private medical insurance funding for N/HM. However, more investigation needs to be carried out to determine if funding is a major driver influencing practitioners' perceptions towards seeking statutory registration. A strong correlation exists between N/HMPs favouring integration and favouring registration implying that, in the perception of N/HMPs, these two issues may be linked. This perception by N/HMPs may be justified by the favourable attitudes and referral patterns of NZ GPs to osteopaths and chiropractors (statutory registered CAM modalities), which indicate a degree of acceptance and integration [11].

Statutory registration of CAM modalities worldwide is supported by the World Health Organisation in its Traditional Medicine Strategy [30] and patient use of N/HMPs' services would appear to create some impetus for such registration [31].

Internationally there is a move towards registration of N/HMPs in a number of countries [32-35]. The US and Canada have licensing (registration) of naturopaths in a number of states [31]. International harmonisation of standards of education and practice for N/HMPs has the potential to create an environment that supports moves towards registration in NZ. This would have potential for greater employment outcomes for N/HMPs, particularly if their perception of alignment with the NZ Health Strategy [16] goals proves to be valid.

Research

Our study results indicate that whilst research is valued and perceived by N/HMPs to have an impact on practice, many N/HMPs acknowledged they had no skills in interpreting research. This lack of research literacy could be reflected in the prevalence of reliance on anecdotal (client reported) assessment of treatment effectiveness. It is possible that a general lack of familiarity with research methodology could affect N/HMP's perspectives, and lead to the reliance on manufacturer's seminars and trade newsletters as sources of researched information about N/HMP treatments. Internationally, studies have shown that CAM practitioners rely on secondary sources of researched information, such as texts, traditional theory and practice, the internet, manufacturer's information and information from educators

Table 7 The association between practitioner characteristics and referrals made between naturopathic and herbal medicine practitioners and Clinical Psychologists

Practitioner and practice-related characteristics		Annual number of referrals made to a clinical psychologist			Annual number of referrals received from a clinical psychologist		
		<6 (n = 26)	6 or more (n = 12)	p-value	<6 (n = 11)	6 or more (n = 4)	p-value
		Mean (SD)	Mean (SD)				
Years of experience		14.0 (2.2)	9.3 (7.9)	0.196	3.4 (1.9)	4.3 (0.5)	0.374
Average case-load per month (all)		37.0 (26.2)	45.8 (29.1)	0.367	35.5 (21.3)	76.6 (54.8)	0.047
		%	%		%	%	
Age	22-44	23.1	54.6	0.062	27.3	50.0	0.409
	>44	76.9	45.4		72.7	50.0	
Education							
Diploma		55.6	57.1	0.446	100.0	66.7	0.168
Under-graduate		33.3	14.3		0.0	0.0	
Post-graduate		11.1	28.6		0.0	33.3	

[12,18,36-39]. The reliance on industry information among N/HMPs is not dissimilar to the results of 3rd and 4th year medical residents in the US, This study showed that those who were reliant on pharmaceutical industry sources for their prescribing behaviours were less likely to utilise researched evidence in practice and recommends educational interventions to reverse this situation [40]. It is possible N/HMPs favour approaches to treatment that incorporate clinical experience, traditional information and patient circumstances to guide treatment, rather than relying on research as a primary source of evidence for practice [41-44]. A survey of CAM practitioners (including 68 N/HMPs) attitudes and use of evidence in Australia found that published clinical evidence ranked fourth in information source preference with traditional knowledge, texts and clinical practice guidelines being given priority. Similar to the current study lack of skills was given a main reason for not implementing evidence in practice. Other reasons were lack of evidence sources, time and industry support [44]. It must be noted however that this attitude is not limited to N/HMPs. A systematic review of the barriers to GPs use of evidence-based medicine found that GPs utilised clinical preference and experience, as well as patient's situations and the practice setting over a purely 'evidence-based' approach [45]. An 2008 NZ study of practice nurses showed that there was still a lack of knowledge of evidence-based clinical guidelines, with variable use among those who had that knowledge [46] indicating a similarity between N/HMPs and nurses in their attitude to evidence and evidence-based medicine. N/HMPs attitude to research and evidence-based medicine could also be a result of current educational provision in N/HMP, with a lack of commitment to developing research capacity and outputs [35,47,48]. A national CAM research unit (as favoured by the N/HMPs surveyed) has the potential to address some of current research challenges that appear to face the sector in NZ.

One limitation of our study is the thirty-two per cent response rate. However this is typical for health workforce studies of this kind [39], particularly those conducted on-line [49]. We selected a convenience sample to capture those practitioners who belonged to active organisations. We considered that their views would be indicative of those N/HMPs who could truly represent the practices and perceptions of the majority of the professions. Another possible limitation is that it is unclear as to whether referral data was based on case-records or N/HMPs recollection, as the question simply asked the practitioners to state the numbers.

Contribution to national health objectives

The results suggest that N/HMPs consider that their practices are effective in contributing significantly towards NZ meeting its National Health Strategy [16]. Some preliminary research from the US suggests that CAM is utilised by a section of the population for disease prevention, with naturopathy used by 0.3% [50] with one study suggesting 25% of the US population utilises CAM for health promotion compared to 17% utilisation for treatment purposes [51]. In NZ, a study of CAM use in paediatric patients found that an average of 7% used CAM for prevention purposes (n = 70) [52]. NM has been shown to have potential in prevention of cardiovascular disease (one of the NZ national health objectives) in a pragmatic randomised controlled trial in Canada [53]. In a US review of the role of CAM under the Affordable Care Act, Thompson and Nichter [54] argue that CAM practitioners are well placed to provide cost-effective "preventive and promotive" health services. This argument is echoed (with specific reference to NM in India) by Tripathy [55], Kraft [32] Whilst these results are significant, research into N/HM in health promotion and prevention of disease is in its infancy. The Naturopathic Medical Research Agenda project [56] prioritises research into NM's role in "... conditions with the highest burden of illness" and "...existing and emerging public health significance", suggesting that funding and resources need to be directed towards health promotion and disease prevention. The perception of NZ N/HMs of their contribution towards NZs health goals indicates that funding and resources could be well spent in such research.

Conclusions

N/HMPs are popular with clients in NZ and they appear to desire a closer and more integrated relationship with the conventional medical profession and public health care system. It is important that practitioners across both conventional and N/HM practice develop an understanding of why their patients are utilising both types of health care. Further research is needed to provide rich in-depth exploration of naturopathic and herbal medicine practitioners and their relationship with patients, conventional providers and the provision of publically-funded health care in NZ.

Endnotes

[a]The terms 'diploma' and 'advanced diploma' refer to educational levels below undergraduate degree. Advanced diploma is at a level above diploma. Most diploma qualifications are three to four years.

[b]The term 'research' indicates 'researched information' unless stated otherwise.

[c]'Statutory registration' refers to regulation that is registered by an act of parliament, as compared to 'voluntary registration' which is governed by a professional bodies without Government oversight.

Competing interests
The authors declare that they have no competing interests.

Authors' contributions
PC designed the study and data collection, led data analysis for this manuscript and led paper writing. JA contributed to the design of the study and provided input to the analysis and the paper writing. RV contributed to the design, conducted the data collection and provided input to the paper writing. JD contributed to the design, data collection and manuscript writing. DS contributed to the design of the study and provided input to the analysis and the paper writing. All authors read and approved the final manuscript.

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Appendix 7 – Manuscript associated with results reported in chapter 6

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ORIGINAL PAPER

The characteristics, experiences and perceptions of homeopaths in New Zealand: results from a national survey of practitioners

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Background: **The popularity of homeopathy is seemingly at odds with the scientific controversy over its effectiveness. Several studies have reported on effectiveness of clinical homeopathy, but few studies have been conducted on practices and perceptions of homeopaths, and none in New Zealand (NZ). To address this gap, this paper reports findings from the first national survey examining the characteristics, perceptions and experiences of NZ-based homeopaths regarding a wide range of issues relating to their role and practice. There were 176 homeopaths in NZ at the time of this survey, who were members of a voluntary register (The New Zealand Council of Homeopaths), homeopaths are not statutorily registered in NZ.**

Methods: **A 65 question, online survey was sent to homeopathic practitioners via their professional associations. A total of 176 homeopaths were invited to participate. Of these 176, 57 (32%) responded.**

Results: **The majority of homeopaths were female (93%). Twelve percent were under 45 years and 20% over 55 years. Most (85%) had qualification in homeopathy of diploma or certificate level and most (66%) were engaged in part-time practice. Mean year of experience was 12.6 and mean caseload per month was 25. 90% considered research useful to validate practice, while 88% considered that it impacted on practice, although only 48% had skills to interpret research papers. There was an association between skills to interpret research and its impact on practice ($p = 0.038$). The majority (87%) were in favour of registration, with a statistically significant association between attitudes to registration and age ($p = 0.027$), the older homeopaths being more in favour. Most (68%) were in favour of integration with conventional practitioners and many referred to conventional practitioners (mean referrals per annum to GPs = 57 and midwives = 30). Homeopaths assessed their contribution to New Zealand Ministry of Health objectives as significant, with 77% perceiving that they improved nutrition, 75% increasing physical activity and 63% reducing smoking.**

Conclusion: **These findings enable greater understanding of the way in which homeopaths practice in New Zealand and how they perceive their role in health care. The**

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findings potentially assist communication between homeopaths and other health professionals. There is a need to further investigate homeopaths' practices and perceptions in NZ. *Homeopathy* (2017) **106**, 11–17.

Keywords: Homeopaths; National survey; New Zealand; Practice characteristics; Integrative practice; Referrals; Registration

Introduction: homeopathy in New Zealand

Despite intense ongoing debate about its efficacy and legitimacy for practice,[1] the popularity of homeopathy amongst patients in New Zealand (NZ)[2,3] highlights the importance of empirically investigating these practitioners and their role within the wider health system.[4]

In the 2006 NZ census, 102 people identified their occupation as a homeopath.[5] In the 2013 census this figure reduced to 78, representing only 2% of all complementary and alternative medicine (CAM) practitioners in NZ.[6] The New Zealand Health Survey 2006/2007[7] reports that one in five people consulted a homeopath or naturopath in the previous twelve months. Data from general practice patients reveal that homeopathy is both popular and, in the view of patients, effective.[2] A survey on CAM use in a regional NZ cancer centre (n = 97) reports 9% patients utilising homeopathy.[8]

Practices and perceptions of homeopaths internationally

In Australia there is a homeopathy registration board, with no statutory status, which is independent of homeopathic associations and administers federal government competency standards.[9] The Australian 2006 census showed that 8.4% of CAM practitioners identified themselves as homeopaths (total CAM practitioners = 19,401).[10] In 2007, 6% of the Australian population used homeopathic medicine, and, of those, 48% consulted with a homeopath.[11] A systematic review of 20 surveys internationally (12 countries) has identified that 1.5% of populations in those countries utilise homeopathy.[12] In several countries in Europe[12] and in South Africa,[13] Canada (Ontario),[14] Ghana, Mauritius, Swaziland, Brazil, Chile, Columbia, Costa Rica, Cuba, Ecuador, Mexico, India, Pakistan and Sri Lanka homeopathy has statutory registration. To date, there has been little published data on the characteristics of homeopaths internationally and none in NZ. To help address this gap, this paper provides the first examination of the characteristics, practices and perceptions of homeopaths in NZ.

Method

CAM practitioners were invited to complete a 65 question, nationwide, on-line questionnaire examining aspects of practice. The questionnaire was developed specifically for this purpose and tested for consistency and clarity with 10 practitioners. This paper reports on findings for homeopathic practice only.

Ethics approval was granted by the Ministry of Health (MoH) National Ethics Advisory Northern A committee and, for study purposes in Australia, the Human Research Ethics Committee, University of Technology Sydney, Australia.

National sample of CAM practitioners

Our survey employed a convenience sampling method to recruit participants, using the two main registering bodies for CAM practitioners in NZ. Similar sampling methods have been utilised in other surveys of CAM practitioners internationally.[15–17] The questionnaire was distributed to 1067 CAM practitioners, of which 100 were homeopaths. Affiliated organisations were allotted a specific range of codes to distribute to members (avoiding duplicate responses and ensuring anonymity) and invited to advise members to participate. Homeopaths were recruited through the NZ Council of Homeopaths, a body affiliated to the NZ Natural Health Council.

Survey measures

Age, gender, ethnicity and practice location were included in the demographic data. Average caseloads, professional experience years, highest level of qualification and attitudes to research formed the basis of exploring practitioner characteristics. Integrative medicine and practices were surveyed through questions on attitudes to integration, referral statistics (to and from conventional practices to homeopaths) and methods of referral. Questions on attitudes towards registration (statutory and voluntary) and funding for practice (both Government subsidies and medical insurance) were included.

Analysis

The data were initially imported into STATA® software and descriptive analyses conducted using means and standard deviations or frequencies and percentages where applicable. A rank-sum test was used to test association between categorical and binary variables and a chi-square test or Fisher's exact test was used to test the association between two categorical variables, where appropriate. A p-value of <0.05 was set to indicate statistical significance.

Results

Of the 176 homeopaths invited, 57 responded (a 32% response rate). The overall response rate for the survey (for respondents over all modalities) was 31%. The

Table 1 Demographics of participants

Factors	*Frequency (percent)*
Age (n = 56)	
20–44	7 (12)
45–54	30 (54)
55–64	11 (20)
65+	8 (14)
Gender (n = 54)	
Female	50 (93)
Male	4 (7)
Homeopathic qualification (n = 55)	
Certificate or Diploma	47 (85)
Undergraduate degree or higher	8 (15)
Highest qualification medical science (n = 43)	
Certificate or Diploma	16 (37)
Undergraduate degree or higher	27 (63)

majority of homeopaths were female (93%). Twelve percent were under 45 years and 20% over 55 years. (See Table 1 for participant demographics and educational qualifications.)

Practice characteristics

Most homeopaths (66%) were in part-time practice with mean clinical consultation hours per week being 14 (SD = 9.2) and clinic management hours being 5 (SD = 6.7). Mean years of experience in practice were 12.6 (SD = 7.8). Mean caseloads per month were 25 (SD = 29), with mean consultation lengths being: 94 min (SD = 25) for initial consultations and 47 min (SD = 11) for follow-up consultations.

Research

The findings show that 90% (i.e. 46 out of 51 participants who responded to this question) of the homeopaths perceived that research provided scientific evidence for validating practice, while 88% (i.e. 46 out of 52 participants who responded to this question) of the homeopaths perceived research as having an impact on their practice (Table 2).

There was an association between those practitioners who considered research to have an impact on their practice and those who considered themselves to possess sufficient skills to interpret research (p = 0.038) (Table 2). Thirty-three percent perceived that they had the skill to conduct research and 48% perceived that they had the skills to interpret research (Table 2).

Ninety-four percent reported that they remained updated with research findings (at least partially). The homeopaths report that they determined outcomes of treatment through several methods. Most (92%) homeopaths utilise client reported symptom change, while 75% employ quantifiable measures. Forty-three percent use medical tests (data not shown).

Regulation and funding

The majority of homeopaths in our study are in favour of registration of their profession (87% of 47 respondents), with 59% of those favouring statutory registration (Table 3). A statistically significant association was identified between attitudes to registration and practitioner age (p = 0.027), with older homeopaths being more in favour of registration (Table 3).

Integrative practice

The majority of homeopaths (68%) agreed that CAM practitioners should integrate with conventional medical care, with 74% favouring integration with general practitioners (GPs) (data not shown).

Reported mean referrals per annum from homeopaths to specific conventional health care providers were as follows: GPs (57 referrals); midwives (30 referrals); specialists (17 referrals); physiotherapists (15 referrals); clinical psychologists (11 referrals); dietitians (9 referrals) and nurses (7

Table 2 The association between homeopathic practitioner characteristics and aspects of research

Practitioner and practice-related characteristics	*Using research for validating practice*			*Research impact on practice*		
	Useful (n = 46)	*Not useful (n = 5)*	*p-Value*	*High/Moderate (n = 46)*	*Low (n = 6)*	*p-Value*
	Mean (SD)	*Mean (SD)*		*Mean (SD)*	*Mean (SD)*	
Years of experience	13.2 (7.7)	9.0 (7.5)	0.240	13.1 (7.6)	11.5 (3.7)	0.600
Hours spent on CAM-related training	1.5 (1.1)	1.9 (1.6)	0.403	2.3 (2.1)	1.0 (0.0)	0.141
Hours spent in practice	14.2 (9.5)	11.4 (8.5)	0.632	14.3 (9.6)	8.8 (7.5)	0.213
Average caseload per month (all)	25.5 (29.7)	26.8 (29.1)	0.813	26.8 (30.4)	15.6 (17.1)	0.303
	%	%		%	%	
Age						
20–44	10.4	20.0	0.520	11.7	0.0	0.452
45+	89.6	80.0		76.4	11.7	
Education						
Diploma	52.8	60.0	<0.001	54.3	60.0	0.509
Under-graduate & Post-graduate	100.0	0.0		25.7	40.0	
Sufficient skills to conduct research						
Yes	34.9	20.0	0.504	37.5	16.7	0.318
No	65.1	80.0		62.5	83.3	
Sufficient skills to interpret research						
Yes	51.1	20.0	0.186	51.1	0.0	0.038
No	48.9	80.0		48.9	100.0	

Table 3 The association between homeopathic practitioner characteristics and aspects of regulation and funding

Practitioner characteristics	*In favour of registration*			*In favour of combined government and private funding*		
	Yes (n = 41)	*No (n = 6)*	*p-Value*	*Yes (n = 40)*	*No (n = 11)*	*p-Value*
	Mean (SD)	*Mean (SD)*		*Mean (SD)*	*Mean (SD)*	
Years of experience	12.6 (7.7)	15.3 (4.3)	0.244	13.8 (7.9)	8.9 (5.5)	0.059
	%	%		%	%	
Age						
20–44	7.3	40	0.027	10.3	9.1	0.909
>44	92.7	60		89.7	90.9	
Education						
Diploma	69.2	60.0	0.199	60.9	50.0	0.099
Under-graduate & Post-graduate	87.8	12.2		39.1	27.8	

Table 4 The association between practitioner characteristics and referrals made between homeopaths and GPs

Practitioner and practice-related characteristics	*Annual number of referrals made to a GP*			*Annual number of referrals received from a GP*		
	0–5 (n = 20)	*6 or more (n = 16)*	*p-Value*	*0–5 (n = 11)*	*6 or more (n = 6)*	*p-Value*
	Mean (SD)	*Mean (SD)*		*Mean (SD)*	*Mean (SD)*	
Years of experience	11.5 (8.2)	16.1 (4.5)	0.059	14.2 (4.1)	17.8 (5.9)	0.190
Average caseload per month (all)	18.4 (15.9)	45.5 (32.6)	0.012	24.2 (22.8)	66.8 (57.8)	0.131
	%	%		%	%	
Age						
20–44	15.8	12.5	0.782	18.2	16.7	0.938
>44	84.2	87.5		81.8	83.3	
Education						
Diploma	86.7	54.5	0.068	50.0	20.0	0.303
Under-graduate	13.3	45.5		50.0	80.0	

referrals) (data not shown.) There was a statistically significant association between average patient caseload per month and referrals to a GP ($p = 0.012$) (see Table 4[a]).

Homeopaths reported referring to conventional care for the following reasons: conditions outside their scope of practice (79%); recognition of early warning signs requiring further investigation (77%); medical diagnosis (72%); conditions more suited to other treatments beyond homeopathy (63%) and 62% conditions too severe for homeopathic treatment. Homeopaths used the following methods for referral to conventional care providers: word-of-mouth (65%); referral letter (23%); telephone (12%) and email (9%) (data not shown).

Mean referrals from conventional care providers per annum were: midwives (37); GPs (17); nurses (9); physiotherapists (6); clinical psychologists (5); specialists (2) and dietitians (2). There was a statistically significant association between referrals from midwives to homeopaths and homeopaths' average caseloads per month ($p = 0.009$) (see Table 5).

The following referral methods from conventional medical care were reported by homeopaths: word-of-mouth (58%); telephone (12%); referral letter (7%) and email (2%) (data not shown).

Homeopaths were surveyed on the usefulness of information that could be gained through access to medical records. These responses were broken down to the following: diagnostic tests conducted (67%); immunisation history (67%); medical prescription (67%); medical history (64%); surgical history (63%) and medical diagnosis (61%) (data not shown).

Contribution to national health objectives

Homeopaths self-assessed their contribution to the New Zealand Ministry of Health published public health objectives.[18] The areas of contribution that homeopaths perceived they contributed most to were: improving nutrition (77%); increasing physical activity (75%); reducing smoking (63%); reducing obesity (61%); reducing drug and alcohol dependence (60%) and 53% reducing the incidence and the impact of cardiovascular disease.

Discussion

This is the first in-depth study of homeopathic practice in NZ and, as such, presents some useful findings, both for the practice of homeopathy and for the manner in which homeopathy relates to the wider health-care system in NZ.[19,20]

[a] A subset of the entire sample.

Table 5 The association between practitioner characteristics and referrals made between homeopathic practitioners and midwives

Practitioner and practice-related characteristics	*Annual number of referrals made to a midwife*			*Annual number of referrals received from a midwife*		
	0–5 (n = 11)	*6 or more (n = 7)*	*p-Value*	*0–5 (n = 12)*	*6 or more (n = 9)*	*p-Value*
	Mean (SD)	*Mean (SD)*		*Mean (SD)*	*Mean (SD)*	
Years of experience	12.9 (5.7)	15.3 (7.6)	0.433	14.4 (8.5)	15.0 (7.1)	0.696
Average caseload per month (all)	17.0 (8.3)	65.7 (60.2)	0.191	13.8 (8.2)	60.0 (49.2)	0.009
	%	%		%	%	
Age						
20–44	0.0	14.3	0.218	16.7	11.1	0.719
>44	100.0	85.7		83.3	88.9	
Education						
Diploma	75.0	50.0	0.334	75.0	42.9	0.205
Under-graduate	25.0	50.0		25.0	57.1	

Integrative practices by homeopaths

The findings in our study that most homeopaths favour integration with conventional medical care are similar to the attitude of NZ naturopaths and herbalists.[20] The openness of NZ homeopaths to working in an integrative environment is mirrored in the US, where two studies have found that homeopaths have been significantly included in integrative centres.[21]

The numbers of referrals from midwives to homeopaths found in this study reflect data from a number of international studies. A survey of Canadian and NZ midwives found that most midwives in NZ (50.7%) and Canada (40%) referred to homeopaths.[22] Several other studies internationally report similar results. Studies conducted in Australia,[23] Germany,[24] Israel[25] and the UK[26] all found considerable referrals occur between homeopaths and midwives or obstetric practitioners, often at the request of pregnant women as was evident in a study of referrals between GPs and homeopaths in West Bengal, India.[27]

Integration of homeopathy into mainstream medicine in Europe shows a mixed picture. A study in the Netherlands found that, while GPs' attitudes to integration of mind—body therapies was seen as 'complementary', homeopathy was considered 'alternative', which could be a barrier to integration.[28] In Europe, 40% of patients are treated with homeopathy in integrative oncology centres.[29]

Integration of homeopathy into mainstream health care may seem fraught with difficulty, given the seeming incompatibility between the fundamental tenets of the systems,[1,30] but it appears from our findings and other evidence that types of integration, especially referrals between conventional practitioners and homeopaths, exist and appear to be continuing to occur. Certainly statutory regulation of homeopaths in NZ, such as is the case with their counterparts in South Africa,[13] may benefit the integration of homeopathy into mainstream health care, as it has for osteopaths and chiropractors in Australia.[31]

Registration and regulation

While self-regulation for homeopaths in NZ exists and appears to be successful in maintaining educational and practice standards,[32] many homeopaths in our study were in favour of statutory registration. Raising educational standards (undergraduate and post-graduate levels), developing research capacity and other programmes to increase the cohesiveness of the profession[33] were considered important to statutory regulation by homeopaths in Ontario.[34] Opposition to statutory registration in NZ from conventional practitioners is reflected in several other countries, including Canada,[35] UK,[36] Australia and India.[37] Italy has made some steps in regulating homeopathy by allowing regional health authorities to support some integrative clinics through the public health system, including homeopathic clinics.[38]

Research

The value that NZ homeopaths place on research is seemingly contradictory when homeopathy's evidence-based value faces sustained criticism from sectors of medicine.[23,37,39,40] The findings in this study indicate that homeopaths in NZ could be receptive to calls for them to become more engaged with research.[41,42] Considerations of clinical meaning and scientific explanations (outside those generated by randomised controlled trials) could comprise the types of scientific papers that homeopaths access and utilise in practice[24] and could be the subject of a useful study. A minority of NZ homeopaths gain their information for practice from peer-reviewed journal papers, consistent with a study in Germany that found that most homeopaths utilise books and seminars for continuing homeopathic professional education.[43] A Canadian study of homeopaths reported that research has not traditionally been part of the homeopathic education curriculum, resulting in skills for interpreting or conducting research amongst homeopaths being limited.[33]

Whilst NZ homeopaths perceive research as having value and impact in their practice, reliance on more traditional homeopathic methods of assessing client change as a result of treatment, such as client reported symptom change, appears to be favoured. This is reflected in findings in other studies,[24,44–46] although in Britain there have been some moves towards homeopaths using measurable patient reported outcomes.[47]

Contribution to national health objectives

Homeopaths in our study reported their self-assessed contribution to national health objectives is primarily focused on nutrition and reducing obesity, along with

reducing smoking, alcohol and drug dependence. It is postulated that homeopathy could be effective for treating the mental/emotional aspects of obesity.[48] A systematic review of the effectiveness of CAM therapies in obesity included two studies using homeopathy; one that showed no significant effect and one showing a significant effect.[49] A comprehensive database search failed to find any evidence for the efficacy of homeopathy in substance addiction.

Limitations of the study

The questionnaire response rate of 31% is possibly a result of its electronic nature,[50] although homeopaths' response rate was marginally better (32%). Workforce studies of this kind typically have similar response rates.[51] This probably has led to several datasets within the study having a lack of statistically significant associations.

Conclusion

This study is the first survey of homeopaths undertaken in NZ. The comprehensive nature of this survey provides valuable information for homeopaths, homeopathic practitioner organisations and educators in NZ. It also provides information that assists other health professionals to gain an understanding of how homeopaths practice, and their perception of important issues such as integration and registration. There is a need for more in-depth research into the nature of homeopaths' attitudes to research and registration, and homeopaths' integration and referral practices, and how these might relate to homeopathic education in NZ. Such investigation is required to provide a greater understanding of the current and potential role of homeopaths in delivery of health care in NZ.

Conflict of interest

The authors declare that they have no competing interests.

Authors' contributions

PC designed the study and data collection, led data analysis for this manuscript and led paper writing.

JA contributed to the design of the study and provided input to the analysis and the paper writing.

RV contributed to the design, conducted the data collection and provided input to the paper writing.

JD contributed to the design, conducted the data collection and manuscript writing.

DS contributed to the design of the study and provided input to the analysis and the paper writing.

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Appendix 8 – Manuscript associated with results reported in chapter 7

R E S E A R C H

The Characteristics, Experiences and Perceptions of Registered Massage Therapists in New Zealand: Results from a National Survey of Practitioners

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Background: **Massage therapy is widely recognized as offering many health benefits, with a growing number of studies finding it has value in stress management, pain reduction, and overcoming physical limitations. However, there are few studies of massage therapists practices and perceptions in New Zealand and internationally. This paper reports the findings from the first national survey examining the characteristics, perceptions, and experiences of New Zealand-based massage therapists on a range of aspects related to their role and practices.**

Purpose: **This study sought to ascertain the characteristics, experiences, and perceptions of massage therapists in New Zealand, particularly in the aspects of: integration of health care; attitudes and practices related to research; and evidence and attitudes to registration.**

Setting: **Massage practice in New Zealand (nationwide survey).**

Participants: **Members of Massage New Zealand (a massage practitioners association).**

Research Design: **Massage practitioners were surveyed online, using a 65-part questionnaire, on a range of characteristics of their practices and their attitudes to research, integration, and registration. Statistical analysis was performed using STATA. Statistical significance was set at 0.05.**

Main Outcome Measures: **Four hundred massage therapists (MTs) were invited to participate and 115 responded, providing a response rate of 29%. MTs valued research (95%) and perceived that it had an impact for their practices (88%). Significant correlations were found for research value and: mean case-load ($p = .009$) and level of academic qualification ($p = .004$). The majority of MTs (79%) supported integration with conventional practitioners, and 83% referred clients to general practitioners, with 75% receiving referrals from general practitioners. Ninety-three percent of MTs supported registration, with 67% of those supporting statutory registration.**

Conclusion: **Massage practitioners perceive that they make a significant contribution to health care, but area of practice, such as research, and referral and integration into mainstream health care require more in-depth investigation.**

KEY WORDS: massage; health care survey; perception; practices; integrative medicine; referral; government regulation

INTRODUCTION

Massage therapy (MT) is one of the most popular forms of complementary and integrative medicine (CIM) with the general public.[1-7] The perceived health benefits for MT users include: emotional well-being and reduced physical limitation;[8] pain reduction;[9] stress reduction; enhancing sleep; injury repair and enhancing recovery from injury.[10]

A number of studies of MTs have been conducted worldwide, investigating MTs practice characteristics and perceptions of aspects related to their practices (see Table 1). Some studies have focused on the therapeutic encounter and how MTs approach the treatment of patients and conditions[11,12] and others have investigated MTs' perceptions and practice characteristics.[13-15]

The practice of MT in NZ is regulated, under a voluntary registration system by Massage New Zealand (MNZ), the only professional body in NZ that regulates MTs.[16] At the time of the survey reported here, MNZ had 400 members.[17]

To date, there has only been one New Zealand (NZ) study of the practices of MTs, investigating: MTs' profiles; a range of practice characteristics and referral patterns; modalities used; conditions treated; and a selection of professional issues. This work, conducted in 2008, provides early descriptive data regarding MTs' practice across NZ.[14]

A 2013 study has shown that, in 2006, Australian MTs comprised the largest number of CIM providers per head of population (1:2,424). Comparatively, in 2006, NZ had one MT for every 3,167 people.[18]

MTs' attitudes and perceptions of the value of regulation and registration have been investigated in

TABLE 1. Comparison of International Studies of Massage Therapists

Research Paper	*Country*	*Study Method*	*Key Domains*	*Regulation & Funding*	*Research and Evidence-Based Practice*	*Integration & Referral*	*Alignment National Strategic Health Objectives*	*Academic Qualifications*
Smith, et al.[14]	New Zealand	Quantitative survey of registered massage therapists (n=66)	Demographics Workload Practice characteristics Referral Patterns Treatment characteristics (modalities offered; conditions treated) Professional issues (indemnity insurance)	Not discussed	Not discussed	Common sources of referral were: physiotherapists (67.2%); general practitioners (60.3%); chiropractors (34.5%), and osteopaths (25.9%). Common referees were: Doctor or general practitioner (69.7%); Osteopath (66.7%); Physiotherapist (60.1%); Homeopath or naturopath (47.0%); Acupuncturist (43.9%); Chiropractor (43.9%); Podiatrist (36.4%); Sports medicine specialist (27.2%); Yoga, Feldenkrais, or Alexander technique practitioner (27.2%); Counsellor (25.8%); Craniosacral therapist (25.8%); other Massage therapist (18.2%)	Not discussed	Ranged from a certificate to a baccalaureate degree, with a post–high school diploma (from a polytechnic or other tertiary training provider) being the most commonly reported qualification (89.4%).
Smith[19]	New Zealand	Mixed methods approach Survey of massage therapists Voluntary, purposive, quota sampling was used to select interview participants including massage students	Demographics	"Regulation, cohesion and set standards as being most valuable for growth within the industry."	Agreement with degree level education linked to evidence-base required for practice	Not discussed	Not discussed	Over three quarters of participants (97/123, 78.8%) held a certificate or diploma massage qualification, with a bachelor's degree in massage therapy (12/123, 9.8%) being less common 49.6% of the participants agreed that degree level education should be the minimum qualification to practice

Leach[18]	International survey (NZ data included)	Quantitative Analysis of census data for five countries (NZ included, n=1272)	Massage workforce size Demographics Workloads Weekly income Academic qualifications Areas of employment	Not discussed	Not discussed	Not discussed	Not discussed	New Zealand High school or certificate (38.4%); Diploma or advanced diploma (36.1%) Bachelor degree (13.4%) Graduate diploma or certificate (3.5%) Postgrad. Degree (1.2%) No qualif. Or not stated (8.5%)
Wardle, et al.[52]	Australia	5 question telephone survey of Association of Massage Therapists (Australian)	Demographics Practice characteristics	Not discussed	MTs (56.1%) relied on research dissemination provided by their professional association A significant number of respondents (39.2%) are more active accessing articles online and other journals. Income and continuing professional education were significantly associated with an active approach to research amongst massage therapists.	Not discussed	Not discussed	Not discussed
Porcino, et al.[15]	Canada (Alberta)	Mixed methods (quantitative survey and semi-structured qualitative interviews)	Demographics Modalities utilised Training characteristics Workloads Assessment (of effectiveness) methods Research and regulation links	Not discussed	Not discussed	Not discussed	Not discussed	Not discussed

Porcino, et al.[11]	Alberta, Canada	Secondary analysis of quantitative data collected in a previous combined methods study of massage therapists	Demographics Practice characteristics and methodologies	Not discussed	Not discussed	Practitioners described a gradual development of decision-making processes as tools for integration. Most practitioners see integration as their administering different types of body therapy. Lack of integration of therapies and practitioners linked to education. No discussion of referral.	Not discussed	Not discussed
Gowan-Moody, et al.[34]	Canada	Quantitative survey	Demographics Research attitudes, perceptions and beliefs Self-reported research skills Research use and factors influencing research use	Regulation positively influences EBP	87% agreed that research added credibility to the profession 93% agreed that research leads to improved client care 93% agreed that research helps to evaluate existing treatment	Not discussed	Not discussed	Not discussed
Kania-Richmond, et al.[36]	Canada	Mixed methods: survey & semi-structured interviews	Not discussed	Not discussed	Some participants involved in research processes to evaluate treatment, none as researchers	Education critical to preparing therapists to work in an integrative environment.	Not discussed	Not discussed
Baskwill & Dore[35]	Ontario, Canada	Mixed methods survey	Demographic data Awareness of evidence and information sources	Not discussed	Therapists rate research information at high importance, but low frequency of use. Lack of access to researched information may contribute to this situation.	Not discussed	Not discussed	Not discussed
Cherkin, et al.[32]	USA	Quantitative telephone survey of 4 CIM professions (including MT)	Demographics Training characteristics Practice characteristics Workload	Not discussed	Not discussed	Not discussed	Not discussed	Not discussed

Sherman, et al.[12]	US (Connecticut & Washington)	Quantitative telephone survey of massage practitioners	Demographics Reasons for patient visits Interaction between MTs and other health professionals Practice characteristics (assessment and therapies applied)	Not discussed	Not discussed	Patients are mainly self-referred (70%); referral from physicians (osteopathic and GPs) (7.5%)	Not discussed	Not discussed
Stuttard[38]	UK	Qualitative interviews with focus groups	Demographics Evidence based practice in massage Regulation	Regulation seen as a significant factor in development of EBP in massage	Need for ongoing education in research and EBP Availability of databases an important factor in development of EBP Links to universities important in development of EBP in massage	Not discussed	Not discussed	Not discussed
Perlman, et al.[40]	USA	Qualitative interviews	Limited demographic data Experience of participating in a clinical trial	Not discussed	Massage can be promoted through research Increased perception of the value of research	Not discussed	Not discussed	Not discussed

a number of studies in NZ,[19,20] Australia,[21,22] and Canada.[23] Findings from these studies illustrate the importance of understanding practitioner perceptions and practices to inform the emergent professions of CIM, such as MT,[24,25] an issue highlighted by the NZ Ministerial Advisory Committee (of CIM) in its identification of the need for "quality, unbiased information on the safety and efficacy of CIM modalities, and for further work to be done to identify and address consumers' needs for information about the practice of CIM in New Zealand".[26]

Inspired by the other international studies and the Ministerial Advisory Committee's recommendation, researchers from two colleges delivering massage education developed a survey to collect data on CIM practitioners' perceptions and practices in NZ. This paper reports the findings from this survey.

A comprehensive literature search identified only one paper[14] on CIM practitioner attitudes and perspectives in NZ. The importance of understanding evidence for CIM practice[27] led to the development of a survey investigating perceptions and practices among CIM practitioners. This paper reports findings from this survey with regards to MTs' characteristics, experiences, and perceptions in NZ and makes comparison with similar studies in NZ and internationally.

METHODS

A largely quantitative online survey was administered to a range of practitioners (including MTs, naturopaths, herbalists, and homeopaths) in NZ, examining their characteristics, perceptions, and experiences relating to a range of key practice-related issues, such as use of evidence in MT practices and integration with other health care practitioners. Using an online platform (via Survey Monkey), the survey included seven domains: demographic practitioner data; practice and referral characteristics; academic qualifications; perceptions and experiences regarding research; integration; registration, and alignment to the NZ health strategy.[28]

Sample

A convenience sampling approach was utilized. MTs were recruited through Massage New Zealand (MNZ), the NZ professional body for MTs with a membership (at the time of the survey) of 400. (At the time of the survey there were approximately 1,400 MTs in NZ.[29] However, MNZ is the only organization that registers MTs in NZ; therefore, it was selected for collection of data.) A similar approach has been employed by another survey of MTs in NZ.[28] The total dissemination of the survey was to 1,067 CIM practitioners. This paper reports on the data obtained from MTs only.

Data Collection

Ethics approval was granted by the NZ Ministry of Health National Ethics Advisory Northern A Committee[30] and, for ongoing analysis, the ethics committee of the University of Technology Sydney, Australia.[31] Informed consent was implied by participation, per the NZ national ethics committee guidelines.[30] Participants were invited to complete the survey via letters that were sent to prospective participants by their respective associations. The raw data were then downloaded by the survey team onto spreadsheets.

Statistical Analyses

Descriptive analysis was conducted (using Excel software) and included frequencies, percentages, means, and standard deviations, where applicable. Bivariate associations between categorical variables used a chi-square test, with a Student's *t* test being applied to test mean differences across categorical variables. Statistical analyses were conducted using Stata® software. Statistical significance was indicated by a p value of $< .05$.

RESULTS

One hundred and fifteen MTs responded to the questionnaire (representing 29% of MNZ membership at the time of the survey). Respondents consisted of 86% females and 14% males, which closely related to the gender make up of MNZ membership at the time of the survey (80% female, 20% male). Forty-one percent of respondents were aged less than 45, with 42% aged between 45 and 54, and 18% aged 55 or older. The base level of qualifications for majority of MTs (64%) was diploma or advanced diploma. Some respondents did hold higher qualifications, with 9% holding a post-graduate degree.

Practice Characteristics

MTs' practices were located mostly in cities (58%), with 31% in towns and 11% rurally. Fifty percent of MTs utilized professional rooms, with 32% utilizing their own homes and 10% consulting via mobile practices, either going to the client's workplace or homes. Most MTs practised part-time (61%), with 36% full-time and 3% practising occasionally. Mean practitioner hours per week were 18.6 (n = 106, SD = 10.6), with 47% practising over 20 hours per week. Massage therapy consultations were an average duration of 68 minutes for the initial visit and 58 minutes for follow-up consultations. Average total caseloads per month were 45.6 (SD = 37.0), with median caseloads per month being 39 comprising 11.4 (SD = 16.1) new clients per month and 35.3 (SD = 28.8) follow-up clients per month. On average, 4.7 hours per week (n = 37, SD = 3.7) were spent in training (massage therapy professional development). Most other mean massage therapy-related hours per week were spent in teaching faculty (n = 18, mean 10.5, SD 9.1) followed by practice-related tasks (mean = 4.7; SD = 7.0).

Research

The majority of MTs (95%) perceived research as having value for their practice, with 88% stating that it impacts (highly or moderately) on their practice. Table 2 depicts the associations between practitioner characteristics and research value and research utilization. A significant inverse association ($p = .009$) was found between mean case-load and the value placed on research. Those practitioners who considered research as having value for their practice spent an average of 17.9 (SD = 10.3) hours in clinical practice, compared to the 28.8 (SD = 7.6) hours spent in clinical practice by those MTs who perceived research as having no value for their practice. Another significant association was found between academic qualification and value placed on research ($p = .004$), with those who hold a certificate or diploma more likely to value research. No significant associations were found between research impact (on MTs' practice) and years of experience, practice hours per week, training hours per week or average caseload per month.

While 46% of respondents reported having the skills to interpret research within their clinical environment, only 15% reported having the skills to conduct research. Sixty-seven percent of the MTs reported that they did not keep up-to-date with research findings. Evidence from research was sourced by the MTs from: association journals (64%); web articles (54%); health-specific magazines (45%); news articles (45%); online scientific journals (34%); association meetings (21%); peer reviewed journals (21%); newsletter from manufacturers (17%); and international conferences (12%). The reasons given by MTs for not having skills to interpret research were: insufficient time (52%); insufficient skills in reading research papers (20%); financial restraints (7%); no access to databases (7%); and the view that it is not important to MTs' practices (7%).

TABLE 2. The Association Between Massage Practitioner Characteristics and Aspects of Research

Practitioner and Practice-Related Characteristics	*Using Research for Validating Practice*			*Research Impact on Practice*		
	Useful (n=98)	*Not Useful (n=5)*	*p value*	*High/Moderate (n=91)*	*Low (n=12)*	*p-value*
	Mean (SD)	*Mean (SD)*				
Years of Experience	8.8 (6.6)	10.6 (8.0)	0.556	8.9 (6.6)	8.6 (7.1)	0.853
Hours Spent on CAM-Related Training	4.97 (8.4)	2 (-)	-	5.2 (8.7)	1.3 (0.6)	0.448
Hours Spent on Administrative Tasks	5.2 (4.5)	3.3 (1.5)	0.485	5.1 (4.5)	4.7 (3.8)	0.816
Average Case-Load Per Month (all)	45.3 (36.2)	89.0 (34.0)	0.009	47.0 (37.4)	53.8 (37.1)	0.642
Age	*%*	*%*		*%*	*%*	
22-44	40.8	20.0	0.354	41.8	25.0	0.265
>44	59.2	80.0		58.2	75.0	
Education						
Certificate/Diploma	65.3	25.0	0.004	60.9	80.0	0.363
Under-graduate	5.3	50.0		7.2	10.0	
Post-graduate	29.3	25.0		31.9	10.0	
Sufficient Skills to Conduct Research						
Yes	17.6	25.0	0.705	17.4	22.2	0.722
No	82.4	75.0		82.6	77.8	
Sufficient Skills to Interpret Research						
Yes	71.2	33.3	0.161	69.0	80.0	0.605
No	28.8	66.7		31.0	20.0	

Regulation and Funding

Ninety-three percent of MTs supported registration for massage therapy (n = 97). Of the MTs who supported registration, 67% supported statutory registration, 31% supported voluntary registration, with 1% supporting other types (non-specified). No association was found between MTs' support for registration and practitioner age (p = .291), level of academic qualification (p = .755) or years of experience in MT (p = .142) (see Table 3).

A combination of private (insurance) and government subsidies for funding MTs' practice was favoured by the MTs (67%), with only 3% of the respondents preferring government subsidies alone.

Integration

The majority of MTs were supportive of integrating their own clinical patient care with a range of conventional care practitioners (CCPs) including with GPs (81%), specialists (78%), and physiotherapists (81%). Eighty-three percent of the MTs surveyed currently referred patients to CCPs. Two percent of MTs' mean annual caseloads were referred to CCPs and 2% (of mean annual caseloads) were received from CCPs. MTs' average number of referrals (per annum) of patients to CCPs were as follows: GPs (6.5); specialists (6.7); physiotherapists (8.1); midwives (11.7); nurses (13.5); dietitians (6.7); and clinical psychologists (8.5). A significant positive association was found between MTs' referral to GPs and MTs' average caseload per month (p = .025), with those reporting smaller caseloads per annum being less likely to refer to a GP. No other significant associations were found between referrals to CCPs and MTs' characteristics, practices or perceptions (see Tables 4–8). The main reported reasons for referral to CCPs by MTs were : for conditions outside the MTs' scope of practice (83%); for medical diagnosis of condition (68%); for conditions more suited to other treatments (67%); where warning signs indicate further investigation (63%); to gain clearance or rule out contraindication for CIM treatment (62%); for conditions too severe for the MTs to deal with (56%); and for conditions MTs training did not cover (53%). Seventy-four percent of referrals to CCPs were conducted through word of mouth, with 21% by referral letter, 20% by e-mail, and 15% by telephone.

Seventy-five percent of MTs reported receiving referral from CCPs. The average number of referrals received from CCPs per annum by the MTs were: GPs (5.6); specialists (9.6); physiotherapists (8.4); midwives (8.9); nurses (13.3); dietitians (18.2); and clinical psychologists (12.6). Seventy percent of referrals from CCPs were conducted through word of mouth, with 14% by referral letter, 13% by telephone, and 12% by e-mail. No significant associations were

TABLE 3. The Association Between Massage Practitioner Characteristics and Aspects of Regulation and Funding

Practitioner Characteristics		*In Favour of Registration*			*In Favour of Combined Government and Private Funding*		
		Yes (n=88)	*No (n=9)*	*p value*	*Yes (n=66)*	*No (n=33)*	*p value*
		Mean (SD)	*Mean (SD)*				
Years of Experience		8.6 (6.4)	12.2 (8.9)	0.142	8.0 (6.5)	10.1 (6.6)	0.163
		%	%		%	%	
Age	22-44	37.5	55.6	0.291	42.4	36.4	0.562
	>44	62.5	44.4		57.6	63.6	
Education							
Certificate/Diploma		65.7	71.4	0.755	62.8	68.0	0.795
Under-graduate		7.4	0.0		7.8	4.8	
Post-graduate		26.9	28.6		29.4	28.0	

TABLE 4. The Association Between Practitioner Characteristics and Referrals Made Between Massage Practitioners and GPs

Practitioner and Practice-Related Characteristics		*Annual Number of Referrals Made to a GP*			*Annual Number of Referrals Received From a GP*		
		<6 (n=35)	*6 or more (n=45)*	*p value*	*<6 (n=37)*	*6 or more (n=23)*	*p value*
		Mean (SD)	*Mean (SD)*				
Years of Experience		12.1 (10.3)	10.1 (8.2)	0.346	2.9 (1.6)	3.3 (1.5)	0.275
Average Case-Load Per Month (all)		23.8 (22.6)	39.4 (33.8)	0.025	33.9 (24.4)	41.6 (36.0)	0.298
		%	%		%	%	
Age	22-44	37.1	40.9	0.733	25.0	26.1	0.925
	>44	62.9	59.1		75.0	73.9	
Education							
Diploma		50.0	42.9	0.130	34.5	53.3	0.261
Under-graduate		39.3	25.7		44.8	20.0	
Post-graduate		10.7	31.4		20.7	26.7	

TABLE 5. The Association Between Practitioner Characteristics and Referrals Made From Massage Practitioners to Specialists

Practitioner and Practice-Related Characteristics		*Annual Number of Referrals Made to a Specialist*		
		<6 (n=30)	*6 or more (n=9)*	*p value*
		Mean	*(SD)*	*Mean (SD)*
Years of Experience		11.5 (9.4)	8.5 (7.1)	0.413
Average Case-Load Per Month (all)		26.6 (19.0)	49.0 (36.1)	0.020
		%	%	
Age	22-44	40.0	37.5	0.898
	>44	60.0	62.5	
Education				
Diploma		45.4	57.1	0.532
Under-graduate		36.4	14.3	
Post-graduate		18.2	28.6	

TABLE 6. The Association Between Practitioner Characteristics and Referrals Made Between Massage Practitioners and Physiotherapists

Practitioner and Practice-Related Characteristics		*Annual Number of Referrals Made to a Physiotherapist*			*Annual Number of Referrals Received From a Physiotherapist*		
		<6 (n=23)	*6 or more (n=6)*	*p value*	*<6 (n=12)*	*6 or more (n=6)*	*p value*
		Mean (SD)	*Mean (SD)*				
Years of Experience		12.0 (10.2)	5.5 (6.8)	0.160	2.8 (1.8)	3.3 (1.4)	0.559
Average Case-Load Per Month (all)		38.7 (29.4)	24.7 (15.1)	0.275	43.1 (23.0)	31.0 (44.9)	0.455
		%	%		%	%	
Age	22-44	34.8	50.0	0.494	50.0	16.7	0.171
	>44	65.2	50.0		50.0	83.3	
Education							
Diploma		50.0	25.0	0.450	42.9	33.3	0.961
Under-graduate		43.8	50.0		28.6	33.3	
Post-graduate		6.2	25.0		28.6	33.4	

TABLE 7. The Association Between Practitioner Characteristics and Referrals Made Between Massage Practitioners and Midwives

Practitioner and Practice-Related Characteristics		*Annual Number of Referrals Made to a Midwife*			*Annual Number of Referrals Received From a Midwife*		
		<6 (n=22)	*6 or more (n=16)*	*p value*	*<6 (n=20)*	*6 or more (n=17)*	*p value*
		Mean (SD)	*Mean (SD)*				
Years of Experience		12.8 (10.2)	9.8 (7.4)	0.346	2.7 (1.9)	2.9 (1.5)	0.685
Average Case-Load Per Month (all)		35.1 (28.8)	36.3(30.7)	0.909	29.0 (27.1)	40.0 (27.4)	0.234
		%	%		%	%	
Age	22-44	29.2	56.3	0.087	30.0	41.2	0.478
	>44	70.8	43.7		70.0	58.8	
Education							
Diploma		41.2	50.0	0.114	40.0	45.4	0.497
Under-graduate		41.2	8.3		40.0	18.2	
Post-graduate		17.6	41.7		20.0	36.4	

TABLE 8. The Association Between Practitioner Characteristics and Referrals Made Between Massage Practitioners and Clinical Psychologists

Practitioner and Practice-Related Characteristics		*Annual Number of Referrals Made to a Clinical Psychologist*			*Annual Number of Referrals Received From a Clinical Psychologist*		
		<6 (n=26)	*6 or more (n=12)*	*p value*	*<6 (n=11)*	*6 or more (n=4)*	*p value*
		Mean (SD)	*Mean (SD)*				
Years of Experience		14.0 (2.2)	9.3 (7.9)	0.196	3.4 (1.9)	4.3 (0.5)	0.374
Average Case-Load Per Month (all)		37.0 (26.2)	45.8 (29.1)	0.367	35.5 (21.3)	76.6 (54.8)	0.047
		%	%		%	%	
Age	22-44	23.1	54.6	0.062	27.3	50.0	0.409
	>44	76.9	45.4		72.7	50.0	
Education							
Diploma		55.6	57.1	0.446	100.0	66.7	0.168
Under-graduate		33.3	14.3		0.0	0.0	
Post-graduate		11.1	28.6		0.0	33.3	

found between referrals from CCPs and MTs characteristics, practices or perceptions (see Tables 4–8).

Contribution to National Health Objectives

The perceptions of MTs with regard to ways in which they contribute to NZ Ministry of Health-published public health objectives[28] included: increasing physical activity (83%); improving nutrition (68%); reducing smoking (41%); reducing obesity (39%); reducing the incidence and the impact of cardiovascular disease (32%).

DISCUSSION

Most MTs in our study were not in full-time practice, which suggests that MTs' practices may not be their sole source of income. This is similar to other studies in NZ and internationally. Whilst many of these previous studies may not be as nationally representative of the MT profession examined, they provide useful comparisons with our study findings. A small (n = 66) postal survey of MTs in NZ[14] found that 57.6% had massage therapy as a sole source of income. Similarly, an Australian study of 301 randomly selected MTs belonging to the Australian Association of Massage Therapists (AMT) (19.5% of total membership) found that nearly half of MTs surveyed had fewer than 10 clients per week (n = 141), and for only 55% (n = 165), massage therapy was the sole source of income.[13] However, it must be noted that AMT is not the only association representing MTs in Australia; members of Massage and Myotherapy Australia, which is the largest association representing MTs across that country, were not sampled in this recent Australian study. A sub-group analysis of a small US study of the characteristics of four CIM professions found that most MTs had between 10 and 17 hours of direct patient contact per week.[12] Comparative modality analyses in the same study (MTs, acupuncturists, naturopaths, and chiropractors) also found that MTs had fewer contact hours per week than the other two professions.[32] It would be informative to the massage therapy profession and massage therapy educators in New Zealand to examine more deeply the reasons why MTs appear to have fewer hours of contact with patients compared to other health professionals.

Research

The inverse correlation between MTs' perceptions of the value that research has for practice and MTs caseload as found in our study may be partly the result of the amount of time the practitioners have to read and apply research, with those in busier practices perhaps having less time to read published research findings. It is also possible that many MTs feel that individualization of treatment leaves little space for applying researched information.[15,23] Nevertheless, there are implications of this lack of interest in research among MTs. One study in British Columbia identified that a lack of research had an impact on the acceptance of MTs' role in health care by other health professionals.[33] These findings are also reflected in a survey of MTs in Saskatchewan, where research was perceived by MTs as adding credibility to their profession.[34] Further, Baskwill and Dore[35] found that lack of access to sources of researched information is likely to be contributing to MTs understanding of the role of researched information in massage practice. Another Canadian study showed that there is still a perceived need for more research training in MTs education.[36] Furthermore, in Canada, an investigation of the development of research understanding amongst MT students (through the use of case studies) found that, alongside the growth of research into MT and body work, competency requirements in MTs' research literacy (by the Canadian massage practice regulatory body) have also grown. This study concludes that the use of case studies in MTs' education is an important step in the process of developing research understanding among the ranks of the profession.[37] In the UK, a qualitative study showed that development of EBP was linked with education (both formal and professional development), as well as access to database information.[38]

While the MTs in our study viewed research as valuable and providing information that validated some of their practices, this was not reflected in their perception of its impact on practice. The lack of impact of research in MTs' practices was also found in a study of Australian MTs,[13] which indicated that MTs gain most of their researched information passively through continuing professional education (CPE), a finding that was not reflected in our study, which found no association between the various forms of CPE MTs undertake and their perception of the value of research, or the impact of research on MTs' practice. However, our study did show a significant association between academic qualifications and the value placed on research, although there was still a perceived lack of guidance in research methods and development of protocols, indicating the need for more CPE in these areas. The Australian workforce study of MTs found that the majority of MTs surveyed regularly read research articles,[13] but the source of those articles is not identified, as it was in our study. The lack of evidence about the role of research within massage therapy practices indicates a potential role for massage therapy educators to educate massage therapy students in the importance of sourcing information from primary research in peer-reviewed journal articles in the development of an evidence-based practice. Another Australian study of MTs found that those reporting higher income levels from their massage practice were more likely to engage with research.[13] However,

the authors conclude that neither MTs' income nor education were found to be the only determinants of engagement with research, and MTs may need to create collaborative networks with researchers and policy makers to enhance their practice.

A study of MTs' educators in the United States[39] found that research literacy was not a high competency desired for MT educators' colleagues (48.1% for colleagues working in a clinical setting, and 38.9% for their own personal therapist). A contrasting study in the US, found that some MTs have responded well to being involved in research studies (as participants), including randomized controlled trials,[40] and MTs are potentially well disposed to being involved in practitioner-generated research, such as case report studies.[41] There is certainly potential in collaboration between massage therapy educators and researchers in NZ to create an agenda that allows MTs to develop into researchers, or at least active providers of interventions in research studies.[42] Such an agenda could include explorations into: how the therapeutic relationship between MTs and their clients is facilitated in practice; the role and value of educational approaches in massage therapy in enhancing MTs skill and aptitudes in clinical practice settings; and how to collect and utilize data within a massage therapy clinical practice.

Regulation and Funding

Statutory registration (SR) was favoured by most MTs in our study (56% of total respondents). In NZ, Smith[19] found mixed views on statutory regulation amongst NZ MTs, but concluded that it is an important step in professionalization of MTs. Just over half (50.6%) of MTs in NZ surveyed by Massage NZ (Inc.) agreed that the association should work towards SR of MTs.[20] As yet MNZ has not stated explicitly that it will pursue statutory registration.[16] The support for a combination and private funding for massage therapy found in our study may reflect the lack of funding support that MTs in NZ experience.[20]

In Australia,[43] there is a similar regulatory situation, with voluntary registers being established with a 50% positive response to the Australian Massage Therapy Association survey question about whether Australian MTs should be statutory registered and funded.[21]

A Canadian study[23] found that SR is perceived by MTs to be linked with evidence-based practice, good business practice, and education curricula that include these approaches. This study also found that MTs in Canada felt challenged through practising outside the publicly funded health system. Future studies of MTs in NZ could explore the MTs perspectives of how funding affects their ability to practise massage therapy successfully.

In Europe, massage therapy is regulated in 20 countries, with 16 of those having European Union registration, by far the greatest span of countries that recognize massage therapy. In several of the European countries, massage therapy is also government funded (wholly or partially).[44]

These studies show that, while SR remains a goal for MTs, there is limited progress towards such regulation worldwide, with only a few countries having SR.[14] Potentially regulation could assist with the integration of MT into mainstream health care.

Integration

The study finding support MTs desire to be integrated with mainstream health care and show some slight progress in terms of referral between MTs and CCPs in NZ. Progress in integration of MT with conventional care in NZ has been linked to the lack of research into MT effectiveness.[45] This may be the reason that the findings in our study indicate that, although MTs in NZ support integration of MTs with other CCPs, annual referrals to and from CCPs are not frequent. However, most MTs did refer patients and received referrals from CCPs. A previous NZ study found similar patterns of referral to and from CCPs in MTs' practices.[14] Meanwhile, an Australian massage therapy workforce study identified MTs as receiving less than 10% of their average annual caseload from referral.[13] In Singapore, 86% of CIM practitioners (with MTs being the predominant modality studied – 50%), referred to CCPs and 74% received referrals from CCPs. Unfortunately, annual referral numbers were not reported in this Singaporean study.[46] A UK study[47] found that 20% of GPs referred to MTs. But again, referral numbers were not reported. Another study in London found that, among CCPs, non-GPs were more likely to refer to MTs,[48] a result similar to that from our study, where only 7% of average annual referrals were from GPs. Similarly, in NZ, CCPs referrals are 1% of total caseload of naturopathic/herbalists.[49] Although many international studies have investigated referral patterns and attitudes among CCPs and CIM practitioners, no data are available internationally on MTs' method of referral to CCPs or how MTs receive referrals from CCPs. Given that our findings show that most referrals to CCPs occur informally (74% by word of mouth), this important information about integrative patient care seems to have been neglected by researchers, despite implications for patient safety and continuity of care. There is scope for more in-depth investigation of integrative practices between MTs and CCPs.

Limitations of the Study

The convenience sampling employed in our study means that only those practitioners who were members of the voluntary register held by MNZ were recruited for participation. This will have excluded MTs who choose not be registered with MNZ, indicating

that any conclusions arising from this study may only be reasonably applied to MTs registered with MNZ, or similar bodies internationally. Nevertheless the response rate of 32% is not dissimilar to other health workforce studies of this kind,[50] particularly those where data have been collected electronically. Another possible limitation of our study is that the information from MTs is self-reported, leading to potential recall bias in the results, a comment made in other similar surveys of MTs.[51,52]

CONCLUSION

There is an apparent integration of MT in NZ in terms of referrals and relationships with CCPs. However, research engagement may present an obstacle to further development of full integration of MT with the mainstream NZ health care system.

Several key areas, including MTs' attitudes and incorporation of researched information into practice, the need for statutory registration of MTs, and how massage therapy could be integrated into mainstream health care, require further investigation in order to contribute to a greater understanding of the role and nature of MTs' practice in the NZ health care system.

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CONFLICT OF INTEREST NOTIFICATION

The authors declare there are no conflicts of interest.

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