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Women's use of complementary and alternative medicine for the treatment of menopause-related symptoms: A health services research study.

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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STATEMENT OF CONTRIBUTIONS TO JOINTLY AUTHORED WORKS CONTAINED IN THE THESIS

The results presented in this thesis have been submitted for publication in peer-reviewed journals through six articles (two literature review papers and four discrete original articles), presented in Chapter 2 and Chapter 4. For each of these papers, I have been primarily responsible for determining the research question, undertaking the analysis and drafting the manuscript.

I have received support in all of these areas by Professor David Sibbritt and Professor Jon Adams. Dr Louise Hickman has provided support with final stages of manuscript drafting. Dr Jane Frawley has also assisted with drafting the published manuscripts contained within this thesis.

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 six papers included in this thesis, all have been published in the high quality peer-review journals. Following is the list of manuscripts contained in this thesis:

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CONFERENCE ORAL PRESENTATIONS

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2. Peng, W., Adams, J., & Sibbritt, D. Hormone replacement therapy use in menopausal women with palpitations, 2004-2010.
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3. Peng, W., Sibbritt, D., & Adams, J. Utilisation of self-prescribed complementary and alternative medicine in current hormone replacement therapy users, 2007-2010.
   - 18th Congress of the Australasian Menopause Society

4. Sibbritt, D., Adams, J., Murthy, V., Peng, W. (2013). Australian women's use of complementary and alternative medicines (CAM) for mental health: A focus on diagnosed depression and anxiety. *Forsch Komplementmed*. *20*(suppl 1), 1.
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ABBREVIATIONS

AHPRA – Australian Health Practitioners Regulation Agency

AIHW – Australian Institute of Health and Welfare

ALSWH – Australian Longitudinal Study on Women's Health

CAM – Complementary and alternative medicine

CI – Confidence interval

FSH – Follicle-stimulating hormone

GP – General practitioner

HRT – Hormone replacement therapy

HSR – Health services research

LH – Luteinizing hormone

NCCAM – National Center for Complementary and Alternative Medicine

NIH – National Institute of Health

OCP – Oral contraceptive pill

OR – Odds ratio

RCT – Randomised controlled trial

SNRI – Selective norepinephrine reuptake inhibitors

SSRI – Selective serotonin reuptake inhibitors

TCM – Traditional Chinese medicine

TGA – Therapeutic Goods Administration

US – United States

WHI – Women's Health Initiative

WHO – World Health Organisation

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ABSTRACT

Background: The use of complementary and alternative medicine (CAM) is increasingly popular and women are key drivers of this trend. To date, there has not been a nationally-representative study that has examined consultations with individual CAM practitioners as well as the self-prescription of CAM products, for a wide range of menopause-related symptoms, amongst women with different menopause status (surgical and natural menopause).

Methods: This study utilised two distinct methodologies: a critical review focusing on CAM use and menopause symptoms via a search of the key medicine and health science databases for peer-reviewed articles published in the previous 10 years; and secondary data analysis from the Australian Longitudinal Study on Women's Health – a cohort study designed to investigate multiple factors affecting women's health over a 20-year period. Data from two recent surveys from the 'mid-age' cohort women were analysed: women aged 56-61 in Survey 5 conducted in 2007 (n=10,638) and women aged 59-64 in Survey 6 carried out in 2010 (n=10,011). A combination of cross-sectional and longitudinal data analyses was employed, involving chi-square tests, multiple logistic regression and Generalised Estimating Equations, to examine associations between the use of various CAM modalities and products and menopause-related symptoms.

Results: The two critical reviews found that a considerable level of CAM use was observed among women in menopause and that many menopausal women use CAM concurrently with their conventional medicine. However, communication regarding CAM between menopausal women and healthcare providers seems less than optimal. Additionally, the varied methodological rigor of the existing literature on CAM use in menopause was evident. In the cross-sectional analyses, 39% (n=3,904) of menopausal women consulted a CAM practitioner, 75% (n=7,508) self-prescribed a CAM product, and 95% (n=9,510) consulted a general practitioner. Differences in consultations with CAM practitioners and the use of self-prescribed CAM were observed amongst women with hysterectomy, oophorectomy and natural menopause. Longitudinal analyses suggested the overall CAM use amongst menopausal women declined with time and was lower amongst women with hysterectomy or oophorectomy compared to natural menopausal women. Cross-sectional and longitudinal analyses found that associations

between CAM consultations/self-prescription and menopause-related symptoms were inconsistent across women with different menopause status.

Conclusions: This thesis presents empirical findings, in menopause care, regarding the use of CAM for menopause-related symptom management. This thesis highlights a need for future research to examine how menopausal women evaluate and make decisions related to the use of specific CAM.

CHAPTER 1 BACKGROUND

This chapter outlines the scope of the thesis, introduces a health services research (HSR) approach as a framework for the research, provides relevant definitions, and identifies the wider significance of key topics addressed in the thesis. The overall thesis objectives, detailed aims, and research questions are also outlined together with background information to provide a framework for subsequent chapters.

1.1 The examination of complementary and alternative medicine: a health services research approach

The popular use of complementary and alternative medicine (CAM) has been accompanied by an increase in research on CAM (Adams et al., 2012). The emerging research activity focused upon CAM has adopted a broad range of approaches and disciplinary perspectives, including a HSR, which the present thesis adopts to critically investigate symptomatic menopausal women's utilisation of CAM. This background section outlines a broad definition and role of HSR as well as the application and significance of an HSR approach to the broad exploration of CAM use, to CAM use in women' health, and more specifically to CAM use in the care of women with menopause-related symptoms.

1.1.1 Current approaches to complementary and alternative medicine research

Complementary and alternative medicine has become a significant research topic in recent years, and researchers have shown increasing interest in the studies of CAM (Herman, D'Huyvetter, & Mohler, 2006; Adams et al., 2012). A number of options regarding different fieldwork methods are available for researchers in their interest to examine CAM therapies or medications, including randomised controlled trial (RCT) design, laboratory experiments, cohort (longitudinal) studies, cross-sectional studies, and case studies (United States (US) National Library of Medicine, 2007). These study methods vary due to their different focus and fields of research evidence (e.g. therapeutic efficacy, pathogenic mechanisms, and healthcare utilisation), and each of them can provide a valuable contribution to our better understanding of CAM and CAM use (Adams, 2007).

RCT design has been the overwhelming focus of biomedicine research and the most popular design in CAM research to date, providing the most rigorous method to test whether an intervention leads to a difference in clinical outcomes and the safety of an intervention amongst selected groups of individuals (Verhoef et al.,2004; Staud, 2011). The aim of RCTs is to remove any potential biases which may influence the chance that the treatment appears to work (Adams, 2007). There is no doubt that the RCT is an important study design for the understanding of the efficacy, effectiveness, and safety of CAM therapies/products for a number of conditions. However, other designs and methods have also been employed for CAM research. These equally important designs are needed as they provide a context for understanding and translating the findings of clinical trials into practice, and enable policy makers to develop the appropriate health policies to fit the increasing number of CAM users (Adams, 2007; Adams et al., 2012).

1.1.2 The contribution of health services research to the examination of complementary and alternative medicine

Set within the wider range of different research methods, this thesis adopts a HSR approach to critically investigate the utilisation of CAM by symptomatic menopausal women.

1.1.2.1 Definition of health service research

The field of HSR houses many methods, perspectives and disciplinary approaches, the professional organisation of HSR in the US, developed a principal definition of HSR - "*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 our health and well-being. Its research domains are individuals, families, organisations, institutions, communities, and populations*" (Lohr & Steinwachs, 2002). In line with this definition, others have more recently outlined HSR as referring to a multidisciplinary study of health-related issues, examining and interpreting the use, accessibility, delivery, cost, communication, behaviours, information seeking, and decision-making of health services for individuals and populations (Lohr & Steinwachs, 2002; Adams & Steel, 2012; Horner, Russ-Sellers, & Youkey, 2013). HSR is seen as key to informing and evaluating practitioners,

individuals, government policy makers, insurance companies, and other officials regarding health-related issues (Steinwachs & Hughes, 2008). Interest in HSR was first raised in the 1950s and 1960s in the US, where research was focused on the improvement of hospital organisations (Emery & Trist, 1965; Wolf & Lebeaux, 1969), and a study conducted by the US committee on the costs of medical care examining the need for medical services and their cost (Viseltear, 1974).

The HSR 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 (US National Library of Medicine, 2007). 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 HSR due to the large sample size, representative design, and low-cost. These data can be used by HSR researchers to comprehensively and systematically study the healthcare utilisation of common conditions (Schneeweiss & Avorn, 2005; Rohrer, 2014). Overall, the evidence provided by the broad scope of HSR is beneficial to investigate the implications of healthcare delivery and policy-making 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, HSR evidence from a vast range of empirical study designs and focus can also help develop innovations for the healthcare system which may potentially lead to improved healthcare delivery for individuals (National Health and Medical Research Council, 2014; Rohrer, 2014).

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

The HSR approach has been developed with a focus upon conventional healthcare and has been (relatively) rarely applied to examine CAM and CAM use. In the past few decades CAM has become increasingly popular, constituting a significant component of individuals' and communities' healthcare utilisation across many countries. Alongside the increase in CAM consumption, research investigating CAM use has emerged. However, many of the studies regarding CAM use by the general population have been methodologically weak (Harris, Cooper, & Relton, 2012). In order to fully understand

the use of specific CAM modalities, along with the necessary ongoing RCTs for examining the efficacy and safety of CAM therapies/products, a HSR approach is an important way to explore all facets of this utilisation, such as the prevalence and determinants of CAM use, CAM users' profiles, and the interface between conventional medicine and CAM within women's health (Adams, 2007). Further, HSR enables researchers to examine the information sources drawn upon by those using CAM, as well as the CAM users' decision-making, treatment outcomes, and relationship with healthcare providers during and following their CAM utilisation. Information about CAM use gained by HSR can help inform a range of stakeholders including consumers, healthcare providers, government and health policy makers (Adams, 2008).

Compared to the RCT design - the gold standard for clinical research exploring the efficacy and safety of therapies/medications - a HSR approach is more suited to studying a range of separate (but in many cases related) issues regarding the use and practice of CAM. Indeed, HSR provides an excellent vehicle with which to broaden the evidence-based focus of CAM research and to provide context to RCT research and other clinical investigations (Adams, Sommers, & Robinson, 2013).

Important topics concerning CAM use and which lend themselves to a HSR approach include: the prevalence of CAM utilisation; the common conditions/diseases for which CAM is used; individuals' perceptions, motivations, reasons, expectations, characteristics, and decision-making of CAM use; and CAM users' conventional health services utilisation (Adams & Steel, 2012). It is important to note that CAM research using a HSR approach has gained support from government agencies in both the US and Australia. The US White House commission on CAM pointed out the need of more research with regard to expanding health services aspects of CAM use (White House Commission on Complementary and Alternative Medicine Policy, 2002), HSR has been listed as a new research goal in the US National Centre for Complementary and Alternative Medicine's (NCCAM) 2005-2009 strategic plan (Herman et al., 2006) and the Australian Research Centre in Complementary and Integrative Medicine has to date attracted over AUD$11million in government funding (via National Health and Medical Research Council and Australian Research Council grants) for public health and HSR

projects focusing upon contemporary CAM use and practice (Australian Research Centre in Complementary and Integrative Medicine, 2015).

In conclusion, HSR is a multidisciplinary research approach which can identify CAM and broader healthcare utilisation and related health service issues amongst populations and individual sub-groups. As such, a HSR approach is applicable and appropriate to address the research aims and questions of this thesis (see section 1.2).

1.1.3 A health services research approach to examining complementary and alternative medicine in the context of menopause care

Menopause influences the basic quality of life of the whole population of women. Hormone replacement therapy (HRT) is the most effective and first-line conventional treatment for menopause-related symptoms. However, menopausal women may avoid using HRT because of its potentially severe side effects (see section 1.5.2). The fear to HRT may be a reason that many symptomatic menopausal women are turning to CAM (National Center for Complementary and Integrative Health, 2014). Currently, CAM has become an important and popular treatment option for menopausal women (see section 2.1). However, women's choice of symptom management in the context of CAM use has not been fully examined (Department of Health, 2011). Previous research has either focused on the efficacy of individual CAM therapies or CAM products for specific menopausal symptoms via RCTs; showing that the use of CAM is unproven but promising (National Center for Complementary and Alternative Medicine, 2011), or examining specific CAM therapies/products together typically via low-quality cross-sectional surveys amongst natural menopausal women, presenting the prevalence of CAM use and the profile, perceptions, information sources, and decision-making of CAM users (Posadzki, Watson, & Alotaibi, 2013).

The utilisation of CAM for menopause includes a wide range of therapies provided by CAM practitioners (e.g. acupuncturists and chiropractors), self-practice CAM therapies (e.g. yoga and meditation), and self-prescribed CAM products (e.g. vitamins and herbal medicines). The diversity of CAM may be reflected in the service delivery for distinct CAM modality. There has been insufficient HSR focus given to the factors which drive menopausal women's use of CAM and their choices of CAM therapies/products, and/or

separate CAM practitioners for menopause-related symptom management, especially employing a longitudinal design, to analyse a large population-based, nationally representative sample of menopausal women. These essential topics deserve rigorous exploration. HSR may comprehensively investigate the role of CAM practitioners in the menopause care setting, contributing to highlight the prospect of the incorporating CAM practitioners into the broader healthcare system (Wardle & Oberg, 2011).

Due to the considerable amount of literature on clinical efficacy research of CAM therapies/products, and with the outcomes of no or little evidence of CAM use in menopause care, our study uses a well-recognised research approach to fill in the gap in knowledge. HSR in CAM provides insights into how menopausal women use CAM, which contributes to the link between healthcare practice and health policy in menopause care. As such, this thesis uses an HSR approach to examine the use of a broad range of CAM modalities amongst a large sample of women experiencing common menopause-related symptoms, including both CAM practitioners and CAM therapies/products. The specific research aims and scope of the thesis are outlined below.

1.2 Aims and scope of thesis

1.2.1 Research aim

This study aims to identify associations between menopause-related symptoms and consultations with CAM practitioners, as well as menopausal symptoms and use of self-prescribed CAM products and practices amongst women who have had a hysterectomy, an oophorectomy, and women with natural menopause.

1.2.2 Research questions

In order to address the above research aim, the study will answer the following six research questions:

1. What is the prevalence of Australian menopausal women's consultations with CAM practitioners (i.e. massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists), including women with hysterectomy, women with oophorectomy, and women with natural menopause?

2. What is the prevalence of Australian menopausal women's use of self-prescribed CAM (i.e. vitamins/minerals, yoga or meditation, herbal medicines, aromatherapy oils, and Chinese medicines), including women with hysterectomy, women with oophorectomy, and women with natural menopause?

3. What is the association between consultations with different CAM practitioner groups (i.e. massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists) and a wide range of common menopause-related symptoms amongst women with hysterectomy, women with oophorectomy, and women with natural menopause?

4. What is the association between self-prescribed CAM (i.e. vitamins/minerals, yoga or meditation, herbal medicines, aromatherapy oils, and Chinese medicines) use and a wide range of common menopause-related symptoms amongst women with hysterectomy, women with oophorectomy, and women with natural menopause?

5. a. Do CAM practitioner consultations (i.e. consultations with massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists) by Australian women with menopause-related symptoms vary over time?
b. Do consultations with CAM practitioners differ between natural menopausal women and surgical menopausal women?

6. a. Does self-prescribed CAM use (i.e. use of vitamins/minerals, yoga or meditation, herbal medicines, aromatherapy oils, and Chinese medicines) by Australian women with menopause-related symptoms vary over time?
b. Does self-prescribed CAM use differ between natural menopausal women and surgical menopausal women?

1.2.3 Significance and scope of thesis

Whilst previous international evidence shows a high prevalence rate of CAM use amongst menopausal women and emerging characteristics of the women who use CAM, there is a lack of the high quality research examining the use of CAM consultations and the use of self-prescribed CAM for individual menopause-related symptoms at different

menopausal status. As such, a well-designed, large-sample study is needed regarding CAM use amongst natural and surgical menopausal women. In particular, there exists little knowledge with respect to Australian women's choice of either CAM consultations or self-prescribed CAM use for specific menopausal symptoms amongst women with hysterectomy, women with oophorectomy, and women with natural menopause.

The research presented in this thesis represents the first large nationally-representative longitudinal study of CAM use by women with menopausal symptoms in Australia. This large-scale national study provides empirical data and valuable information regarding CAM use for Australian women with menopausal symptoms via the combination of cross-sectional and longitudinal analyses.

1.2.4 Organisation of thesis

Chapter 1 presents background information on: an HSR approach to CAM research both generally and specifically relating to menopausal women; the wider context of CAM including CAM definitions, categories of CAM modalities, utilisation of CAM for general women's health and specifically amongst menopausal women; and the wider context of menopause care in Australia including options of conventional and CAM provision and providers.

Chapter 2, Section 2.1, reviews the international literature relating to menopausal women's CAM use and more specifically reviews the prevalence of CAM practitioners/therapies/products utilisation, CAM users' profile, women's motivations for and decision-making details of CAM use, and the communication between menopausal women and healthcare providers with regard to CAM use in the last 10 years. A 10-year period was chosen as it is a typical time frame for reviews, to consider only contemporary research. These findings have been published in the journal *Menopause*.

Chapter 2, Section 2.2, also reviews the international literature relating to menopausal women's traditional Chinese medicine (TCM) use and more specifically reviews the prevalence of TCM practitioners/therapies utilisation, TCM users' profile, menopausal women's motivation for and perception of TCM use, and TCM practitioners' pattern

differentiation amongst menopausal women in the last 10 years. These findings have been published in the journal *Climacteric*.

Chapter 3 describes the methodology, study design, sample selection, ethical considerations and statistical analysis employed in the research.

Chapter 4, Section 4.1, presents the results from the study regarding the prevalence rates of menopausal women's (including women with hysterectomy, women with oophorectomy, and natural menopausal women) consultation with CAM practitioners, use of self-prescribed CAM, consultation with conventional practitioners (general practitioners and specialist doctors), and use of HRT. These findings have been published in the journal *Maturitas*.

Chapter 4, Section 4.2, presents the results from the study regarding the cross-sectional associations between the women's consultations with four CAM practitioner groups and menopause-related symptoms, by menopause status. These findings have been published in the journal *Climacteric*.

Chapter 4, Section 4.3, presents the results from the study regarding the cross-sectional associations between use of five types of self-prescribed CAM and menopause-related symptoms, by menopause status. These findings have been published in the journal *Complementary Therapies in Medicine*.

Chapter 4, Section 4.4, presents the results from the study regarding the associations between the women's consultations with four CAM practitioner groups and menopause-related symptoms, and between the women's use of five types of self-prescribed CAM and menopause-related symptoms over time. These findings have been published in the journal *Menopause*.

Chapter 5 discusses the implications of the findings of this thesis in the context of previous research, identifies limitations to the study, and highlights important issues relevant to the research objectives. This chapter also identifies areas for future research.

Chapter 6 summarises the primary findings of this thesis, and highlight the future research and policy directions which may be addressed from the results of the study.

Overall, this thesis provides a first step to examining CAM consumption amongst women with menopause-related symptoms using HSR methodology through literature reviews and data analysis outcomes. Building upon the evidence highlighted in the literature reviews, the analyses of data from the Australia Longitudinal Study on Women's Health (ALSWH) provides novel empirical evidence and insight to the use of a wide range of CAM consultations/self-prescribed CAM for certain menopause-related symptoms, stratified by menopausal status. The combination of information from literature reviews and analysis outcomes as outlined in this thesis can help to fully explore and understand the details of CAM use in the management of menopause-related symptoms.

1.3 The wider significance of complementary and alternative medicine

A fundamental topic of focus for this thesis is the use of CAM. CAM utilisation has been identified as being prevalent across the general population, amongst women (for many aspects of their health and well-being), and, more specifically, amongst women for the management of menopause-related symptoms (Xue et al., 2007). As such, this background section outlines the definition and modalities of CAM, the utilisation of CAM modalities amongst the general population and menopausal women in Australia, and outlines noteworthy issues regarding CAM provision in the context of the Australian healthcare system.

1.3.1 Definition of complementary and alternative medicine

CAM has increasingly become the focus of academic research attention and has been identified as an important public health issue with serious implications for providers and health policy makers (Adams et al., 2012). The definition of CAM varies across countries and cultures (Wieland, Manheimer, & Berman, 2011). The US NCCAM has described CAM as "a group of diverse medical and healthcare systems, practices, and products that are not generally considered to be part of conventional medicine" (NCCAM, 2015a) and recommends categorisation of CAM based upon three main groupings - natural products (e.g. herbs, vitamins/minerals and probiotics); mind-body

practices (e.g. acupuncture, massage therapy, yoga/meditation, relaxation techniques, chiropractic/osteopathy and other spinal manipulation, and movement therapies); and other complementary health approaches (e.g. Chinese medicine, naturopathy, and Ayurvedic medicine) (NCCAM, 2015b). Meanwhile, the British Medical Association has provided a definition relevant to medical curriculum stating that "CAM involves any medical system based on a theory of disease or method of treatment other than the orthodox science of medicine as taught in medical schools" (British Medical Association, 2010). Further detail is included in the definition provided by the Australian Medical Association in which it is suggested the term "complementary medicine" refers to both complementary medicines and therapies, "includes a wide range of products and treatments with therapeutic claims that are not presently considered to be part of conventional medicine" (Australian Medical Association, 2012). In line with these various definitions, the definition of CAM adopted in the study on which this thesis is based, is as follows: "a diverse group of healthcare practices and products not traditionally associated with the medical profession or medical curriculum" (Adams et al., 2012).

To operationalise the definition of CAM adopted in this thesis, a range of specific CAM modalities fundamental to women's health were selected based on the common CAM providers and CAM provision shown in the "health service delivery profile Australia 2012" released by World Health Organisation (WHO) and Australian Institute of Health and Welfare (AIHW), Australian Government (WHO & AIHW, 2012). CAM practitioners included in the study are: massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists. The CAM practices/products included in the study are: vitamins/minerals, yoga/meditation, herbal medicines, aromatherapy oils, and Chinese medicines.

1.3.2 Contemporary context of complementary and alternative medicine

CAM has been an increasing popular treatment option amongst the general population in Western countries, and its wide range of therapies/products has been used for the management of a variety of health symptoms and diseases. This section provides the prevalence of CAM use, profile of CAM users, and CAM practices utilised for the

broad field of women's health and specifically for use by menopausal women over recent years.

1.3.2.1 Prevalence of complementary and alternative medicine use

CAM use, reported in a variety of national surveys, has been identified as prevalent in many countries, such as the US (Barnes et al., 2008; Okoro et al., 2012), UK (Hunt et al., 2010; Posadzki et al., 2013), Canada (Metcalfe et al., 2010), and South Korea (Seo et al., 2013). Some studies have investigated the prevalence of consultations with a number of CAM practitioners as well as the use of CAM therapies/products, respectively. A systematic review specifically examined the prevalence rates of visits to acupuncturists, homeopaths, osteopaths, chiropractors and herbalists from nationally representative studies worldwide (Cooper et al., 2013). This review revealed that the prevalence of CAM use is different across countries. For instance, the average rates of consultation with an acupuncturist were 1.0% in the US, 1.6% in the UK, and 1.7% in Canada. Findings from the 2007 US National Health Interview Survey showed chiropractors/osteopaths (8.4%) and massage therapists (8.1%) were the most popular CAM practitioners consulted by the general public, whereas only 0.3% of Americans visited naturopaths in a 12 month period (Hawk et al., 2012). A large national cross-sectional study that examined the prevalence of CAM practitioner visits amongst 400,055 Canadians aged 12 years and older estimated that 12.4% of the Canadian general population consulted a CAM practitioner in a 12 month period, with the most commonly visited CAM practitioners being massage therapists (62.9%), acupuncturists (18.3%), and chiropractors (11.3%) (Metcalfe et al., 2010). A systematic review of the global literature on CAM use reported that chiropractic, herbal medicines, and massage were the most common CAM therapies used by the general population. Prevalence rates of chiropractic ranged from 0.5% in South Korea to 16.7% in Australia; those of herbal medicines ranged from 0.8% in the UK to 26.6% in Germany; and those of massage ranged from 1.3% in South Korea to 18.2% in Germany (Frass et al., 2012). Another systematic review evaluated 87 studies conducted in the European Union and found that the prevalence of CAM therapies use ranged from 0.3% to 86%, showing great variation across countries and from study to study (Eardley et al., 2012).

In Australia, a national population-based survey has estimated that 68.9% of the

population older than 18 years had used one of 17 forms of CAM therapies/products and 44.1% had consulted a CAM practitioner over a 12-month period (Xue et al., 2007). In this study, vitamins/minerals were found to be the most popular CAM therapy/product (45.8%), followed by massage therapy (27.2%), meditation (17.5%), and herbal medicines (16.3%) (Xue et al., 2007). A recent national study showed 24% of Australian adults with a chronic condition (1.3 million) regularly used CAM as a treatment option (Armstrong et al., 2011). A random sample of 1,261 adults in (the State of) Queensland determined that 61% had used either self-prescribed CAM therapies or visited a CAM provider (Thomson et al., 2012), and the most commonly used CAMs were massage (51.2%), acupuncture (43.3%), chiropractic (41.4%), herbal medicine (36.8%) and vitamins/minerals (29.9%). Cohort studies have reported even higher use, for example a survey of surgical patients in four major Australian hospitals reported that over 90% were using CAM, with vitamins/minerals (60.3%) and massage therapy (45%) being the most frequently used CAM modalities (Shorofi, 2011).

It is important to note that researchers have commented that a large proportion of studies with regard to CAM use by the general population are methodologically weak, suffering from poor design and/or reporting (Eardley et al., 2012; Posadzki et al., 2013; Seo et al., 2013). In addition, it is difficult to interpret and compare the use of CAM across studies/countries mainly due to the variations in CAM definitions (e.g. different CAM practitioners modalities and varied CAM products), and study design (e.g. cross-sectional vs longitudinal studies).

1.3.2.2 The characteristics and determinants of complementary and alternative medicine users

As stated above, empirical research has identified the high use of CAM amongst the general population in numerous countries. Although comparison of the prevalence across studies is difficult, the profile of CAM users could be drawn on from the existing literature. Many large studies and review papers reported a similar demographic profile of CAM users internationally and in Australia specifically. CAM users, compared to non-CAM users, have been found to be generally female, middle-age (30-50 years), reside in rural areas, have obtained a higher educational qualification, have a higher income, have full-time work, and suffer from poorer health (Williams et al., 2007;

Haskell, Bean-Mayberry, & Gordon, 2009; Lunny & Fraser, 2010; Bishop & Lewith, 2010; Eardley et al., 2012; Frass et al., 2012).

CAM users appear to use CAM practices in conjunction with conventional health services. A national population-based study reported a significant proportion (38.1%) of participants who used CAM concurrently to the consultation with a general practitioner (GP) or specialist doctor (Xue et al., 2007). Also, a recent Australian Bureau of Statistics report affirmed this characteristic of CAM users (Australian Bureau of Statistics, 2008), with 63% of people estimated to be concurrently using CAM and consulting a GP or specialist doctor.

Medical conditions are suggested to be a predictive factor of CAM utilisation, and CAM users have been reported to be likely to experience more than one chronic health condition (Metcalfe et al., 2010; Okoro et al., 2012). Adults experiencing specific symptoms are significantly associated with CAM use, such as back pain, insomnia, headaches, and anxiety (Frass et al., 2012; Hunt et al., 2010). Conversely, finding of the Australian National Health Survey 2004-2005 indicated that few Australians with asthma, diabetes or heart diseases used CAM, as most of people with asthma, diabetes or heart diseases can receive immediate benefits from conventional medicine (Armstrong et al., 2011).

Further, ancillary private health insurance is reported to be positively associated with an increased use of CAM (Spinks & Hollingsworth, 2012). Many Australian private health insurance companies have subsidized some CAM therapies under specific conditions (Medibank, 2015). However, the general population in most countries are paying a large amount of out-of-pocket expenses for their utilisation of CAM without insurance coverage (Bodeker & Kronenberg, 2002; Herman et al., 2006). It has been estimated that a total of $US33.9 billion was spent out-of-pocket on consultation with CAM practitioners (354 million visits to CAM practitioners) and on purchases of CAM therapies/products in US in 2007 (NCCAM, 2009). Approximately $AU416 and $AU349 per annum per person were spent by Australians on visit to CAM practitioners and utilisation of self-prescribed CAM in 2009, respectively (Adams et al., 2011).

1.3.2.3 Complementary and alternative medicine practice in (mid-age) women's health

As described above, women (especially mid-age women) have been found to be high users of CAM. CAM appears to be a popular treatment choice for a range of women's health issues including use during pregnancy, and for reproductive health and for menopause-related symptoms (Upchurch et al., 2010; Steel et al., 2012). For example, An Australian national-wide study indicated that mid-age women were more likely to consult with a naturopath/herbalist if they had a trade/diploma qualification, were frequent users of conventional health services, and reported a number of conditions related with menopause such as back pain, hot flushes, vaginal discharge, and night sweats (Adams, Sibbritt, & Young, 2007). Another large nationally representative study focusing on CAM use conducted in US showed that 40% of women have used at least one type of CAM. Herbal medicines, vitamins, and other biologically based therapies were the most frequently used CAM modalities (Upchurch et al., 2010). A literature review suggested the utilisation of CAM was prevalent in pregnant women, showing several common CAM modalities used for the treatment of pregnancy-related symptoms, including vitamin, massage therapy, herbal medicines, and aromatherapy oils. Both pregnant women's belief of CAM as being safer compared to conventional medications and their active control of the choice of treatments for own health, play an important role in CAM use (Hall, Griffiths, & McKenna, 2011).

A concern with seeking 'natural' treatments appears to be a key driver for menopausal women in their consideration of CAM use, and many women believe that CAM is safer than pharmaceutical medications and without side effects (Ma, Drieling, & Stafford, 2006; Hill-Sakurai, Muller, & Thom, 2008). Further, natural CAM therapies or products can manage their menopause-related symptoms effectively as their mothers or grandmothers may have undergone menopause without any medication from healthcare providers (Hill-Sakurai et al., 2008). As such, it is not too surprising that mid-age women may self-evaluate treatment options rather than rely on the advice from healthcare providers. It has been reported that they generally gather both professional information from a range of practitioners and/or non-professional information from a number of informal sources when making decision of CAM use (Gollschewski et al., 2008; Broom et al., 2012a). Further, it is common amongst women to share information on CAM use, especially for menopausal women (Henwood et al., 2003; Gollschewski et

al., 2008). Mid-age women are active in choosing appropriate CAM treatments after gathering the information on the self-identified effectiveness of available treatments and basic knowledge of treatments and practitioners (Broom et al., 2012b). However, this characteristic of mid-age women making decision on CAM use may occur without consulting a healthcare provider.

1.3.2.4 Complementary and alternative medicine practice in menopause care

Despite little (and in many cases only emerging) evidence of the efficacy of different CAM for the treatment of menopause-related symptoms (Rees, 2009; Shifren et al., 2014), menopause care is an area where CAM appears to be making its presence felt internationally (Huntley & Rees, 2010). Menopausal women accounted for one of the largest groups of CAM users, approximately 80% of women aged 45-60 had used non-prescription therapies for the management of menopausal symptoms in the US (Bair et al., 2008). An Italian study reported that 33.5% women with menopausal symptoms have used CAM, and 23.5% have consulted one or more CAM practitioners (Cardini et al., 2010). The largest longitudinal study in the US on menopausal transition care identified associations between menopause-related symptoms and CAM use, such as between musculoskeletal symptoms and glucosamine, as well as between mood symptoms and ginkgo biloba (Gold et al., 2007). However, there has been an absence of literature examining the details of CAM utilisation for women who have undergone surgical menopause (Bair et al., 2005; Berecki-Gisolf, Begum, & Dobson, 2009; Van Caspel, 2012).

Only six studies focusing on CAM use in menopause care have been conducted in Australia to date, and all of them are cross-sectional (Parvathy, Adams, & Sibbritt, 2004; Gollschewski et al., 2004; Gollschewski et al., 2005; van der Sluijs et al., 2007; Gollschewski et al., 2008; Gartoulla et al., 2015). Amongst these six Australian studies, five were undertaken before 2006. Interpreting the findings from previous research in Australia on CAM use for women with menopause-related symptoms is challenging, due to the variation in study design, including classification of CAM modalities, population, setting and sample size across different research. Further, they do not explore the use of some CAM therapies, such as yoga, meditation, and Chinese medicines for women with menopause-related symptoms (Gollschewski et al., 2004).

The research does show that nutritional supplements (66.8%) and herbal therapy (41%) were the most commonly cited CAM therapies among 886 symptomatic menopausal women in Queensland in 2004 (Gollschewski et al., 2004). A national survey revealed that evening primrose oil (3.91%) and ginseng (1.73%) were the most commonly used CAM products for menopause-related hot flushes/nights amongst 2,020 menopausal women aged 40-65 years in 2013 (Gartoulla et al., 2015). Further, a 2003-2004 Sydney-based study (van der Sluijs et al., 2007) reported that the commonly visited CAM practitioners for symptomatic menopausal women included naturopaths (7.2%) and acupuncturists (4.8%), but these prevalence rates were far lower than that of the use of self-prescribed CAM products (33.5%). A 2013-2014 national survey (Gartoulla et al., 2015) reported that 8.33% of women (168/2,017) reported having at least one consultation with a CAM practitioner for menopausal symptoms, and the most associated symptoms with consultation with a CAM practitioner were hot flushes and night sweats.

To address this research gap regarding menopause care research in Australia, more studies are required - research drawing upon specific CAM practitioner and therapy/product modalities commonly used by menopausal women and employing a large nationally representative sample, as well as longitudinal study design and analysis. A contemporary examination of CAM use (both CAM practitioners and CAM therapies/products) amongst women with detailed menopause-related symptoms at different menopausal status will provide crucial insights into the relationship between CAM use and menopause care, and help further inform future CAM practice research and healthcare policy development (Murtagh & Hepworth, 2003). The Australian Longitudinal Study on Women's Health (ALSWH), on which this thesis is based, include questionnaire items on a wide range of CAM provider and therapies/practices, as well as menopause status (surgical or natural menopause), and thus allows for the examination of the change in CAM use over time amongst menopausal women.

1.3.3 Complementary and alternative provision in the Australian healthcare setting

In the Australian healthcare setting, biomedicine is the dominant authority in health and has legislative supports such as statutory regulation, third party payment, and medical

practice laws. In the recent years, some CAM profession have undergone statutory regulation and many types of CAM therapies have been subsidised via government support or via private health insurance rebates.

1.3.3.1 CAM practitioner registration

The Australian Health Practitioner Regulation Agency (AHPRA) is the only agency responsible for the execution of the National Registration and Accreditation Scheme for registered practitioners in Australia, including CAM practitioners' registration (https://www.ahpra.gov.au/). Every healthcare practitioner registered with AHPRA needs to meet the quality requirements regarding qualification and practice. CAM practitioners constitute the third largest group of healthcare providers in Australia (Leach, 2013). These practitioners mainly work in a clinic or may be part of a group practice (Adams et al., 2003; Leach, 2013). AHPRA overseas three National Boards of CAM practitioners at present, including Chiropractic Board of Australia (registration of chiropractors), Osteopathy Board of Australia (registration of osteopaths), and Chinese Medicine Board of Australia (registration of Chinese herbal medicine practitioner and acupuncturists).

AHPRA data published in 2014 showed that 10,605 people identified their healthcare profession as a CAM practitioner. Of these, there are 4,596 chiropractors, 1,804 osteopaths, 4,205 acupuncturists, and 2,681 Chinese herbal medicine practitioners (there are 2,060 practitioners registered in the divisions of both acupuncturist and Chinese herbal medicine practitioners) (http://www.ahpra.gov.au/chinese-medicine.aspx; http://www.chiropracticboard.gov.au/; http://www.osteopathyboard.gov.au/). All professional practitioner groups need to achieve the registration standards developed by AHPRA pertaining to criminal history, English language skills, professional indemnity insurance, recency of practice, and continuing professional development. A more detailed description of each CAM practitioner group studied in this thesis is outlined below (see section 1.5.3).

Most CAM practitioner groups are not covered by AHPRA, and fall outside the authority of statutory regulatory boards, and are largely self-regulated (Wardle et al., 2014a). Of these CAM professions, naturopaths and herbalists are of particular concern

as they use herbal medicines, nutrition, and other CAM products which may lead to potential interactions with medications (Lin et al., 2005; Wardle et al., 2013a).

1.3.3.2 Privatisation of CAM healthcare

In the context of the Australian health system, health services are paid by government sources (all levels of government) and non-government sources (private health insurers), out-of-pocket payments by individuals, and injury compensation insurers. A person can have public health insurance only or a combination of public and private health insurance (Private Health Insurance Ombudsman, 2013). Public sector health services are provided by the Australian government. Medicare is a National government initiative and the government funded universal public health insurance scheme. Medicare covers three major elements, involving the free treatment and some diagnostic & allied health services for patients in public hospitals, the payment of rebates for healthcare services listed on the Medicare Benefits Schedule, and the subsidies of the costs of a large number of prescription medicines under the Pharmaceutical Benefits Scheme (Department of Human Services, 2015).

Private health insurance offers insurance coverage for some or all of the costs of health services not covered by Medicare (Department of Health, 2012). Private health insurance is not a compulsory insurance and people can choose the levels and types of health services covered to suit individual needs. There are two types of private health insurance: hospital policy covers people when they go to private hospitals, while general treatment policy (also known as Ancillary Health Insurance) covers people for the use of ancillary treatments such as dental services and CAM therapies (Department of Health, 2012). There has been a consistent increase in the number of Australians with private health insurance over the past decade. In 2011-12, up to 57% of all adults were covered by general private health insurance. People aged 55-64 years have the highest coverage (68%) than people of other age groups (AIHW, 2013).

In Australia, most CAM services are paid by the individuals, and only a few CAM provider services attract refunding by private health insurance and these are diminishing over an annual period leaving consumers considerably out-of-pocket (Department of Human Services, 2015). Only very little government funding is provided for limited

CAM professions, such as acupuncture delivered by GPs (Wardle, Adams, & Sibbritt, 2013b). Research has shown that people who have private health insurance are more likely to use CAM compared to those who are uninsured (Xue et al., 2008).

In the context of menopausal women's health, the coverage of private health insurance is mainly related to visits to conventional providers (general practitioners and specialist doctors), HRT use, and CAM providers. GPs are the typically the first contacted healthcare providers. A person can visit a specialist doctor with the referral from the GP (AIHW, 2014). Medicare will reimburse all the cost of the Medicare Benefits Schedule fee for a general practitioner. However, the Medicare Benefits Schedule fee for a specialist doctor can only be reimbursed 85% (Private Health Insurance Ombudsman, 2015). Essential HRT and some hormonal medication are not on the Pharmaceutical Benefits Scheme. As a result, the cost of HRT is not covered by Medicare (Walkom, Loxton, & Robertson, 2013). Private health insurers increasingly add more CAM therapies amongst their coverage, and numerous CAM professions such as chiropractic, acupuncture, massage therapy, and naturopathy, have been subsidised via private health insurance rebates (Medibank, 2015; WHO & AIHW, 2012).

Overall, public health insurance and private health insurance cover different consultations and treatments. People need to pay out-of-pocket expense for the cost of most CAM. The role of private health insurance in women's CAM use needs to be taken into account and deserves to be explored as the status of private health insurance may change women's treatment choices for specific symptoms.

1.3.3.3 Regulation of CAM products

The Therapeutic Goods Administration (TGA), serving as a government agency, has been responsible for the regulation of CAM products since 1989 (https://www.tga.gov.au/). The TGA undertake a series of assessments and monitoring activities to ensure that CAM products available meet an acceptable standard (WHO & AIHW, 2012). Most CAM products are regulated by TGA and are listed as low risk goods (Wardle et al., 2014a). Most of these CAM products are easily purchased in supermarkets, pharmacies or nutrition stores in Australia. It is important to note that CAM products which have been included in the "listed medicines" of the TGA do not

signify that the TGA have evaluated the efficacy and safety of each product (MacLennan, Myers, & Taylor, 2006). Only the quality of the ingredients of the listed medicines has been assessed (WHO & AIHW, 2012).

1.4 The wider significance of menopause care

Menopause is a significant period of time in every woman's life. Each woman's experience of menopause is unique (Nelson, Taylor, & Weatherall, 2008). By the year 2030, according to the WHO estimation, the number of menopausal women is expected to rise to 1.2 billion worldwide (Hill, 1996). Menopausal women with symptoms cost hundreds of millions of dollars every year and are considered a heavy economic burden for the health system (see section 1.4.4). Specifically, more than one million women experience menopause-related symptoms within a work setting in Australia (Jack et al., 2014). The period during menopause could be a highly productive stage of the life for a woman, while menopause tends to have a considerable negative impact on the quality of life of both the woman and her families (Utian, 2005). Some women who experience severe symptomatic menopause may leave the workforce thus incurring financial loss (Jack et al., 2014).

Therefore, menopause care services play a distinctive role in healthcare delivery to help women manage this life stage rather than suffering from menopause-related symptoms. This following section addresses the background of menopause care, with the description of the definition of menopause, details of each common menopause-related symptom, the different status of menopause, and the economic burden caused by menopause.

1.4.1 Definition of menopause

Menopause, the permanent cessation of menstruation resulting from a natural decline of ovarian hormone secretion, is a gradual process of women that usually begins between the ages of 40 and 58 years (average age: 52 years) (Shifren et al., 2014). Factors such as demographic factors, alcohol consumption, smoking, and previous hormone products use, affect the age at menopause commencement (Kinney, Kline, & Levin, 2006; Gold et al., 2013). All healthy women experience the transition from a reproductive (marked by regular ovulation and cyclic menstrual bleeding) to a

postmenopausal period (marked by amenorrhea) (Grady, 2006). Natural menopause is diagnosed after 12 continuous months of amenorrhea not associated with a pathological cause. Further, menopause can be induced by surgical removal of the ovaries (oophorectomy) with or without surgical removal of the uterus (hysterectomy) (Nelson et al., 2008). The details regarding surgical menopause are shown in section 1.4.3.

Natural menopause consists of three stages - premenopause, perimenopause, and postmenopause. However, researchers have not reached a consensus on the definition of each stage of natural menopause. Although there are different specific definitions of premenopause, perimenopause, and postmenopause defined by the WHO and The North American menopause society (WHO, 1981; North American Menopause Society, 2015a), this study draws on the description of menopause provided by the Melbourne Women's Midlife Health Project, Australia. The Melbourne Women's Midlife Health Project adopts clear and meaningful definitions of the three stages of the natural menopause which are required for both cross-sectional and longitudinal data analyses (clear-cut hormonal differences between early and late perimenoapusal women) (Guthrie et al., 2003), and these definitions have been used in several large studies of menopausal women's health such as the Study of Women's Health across the Nation and Seattle MWHS study (Mitchell, Woods, & Mariella, 2000; Randolph et al., 2003; Burger et al., 2007). Therefore, women are described as premenopausal if they have menstruated in the last three months and report no change in menstrual frequency in the last 12 months; perimenopausal if they report changes in menstrual frequency or three to 11 months of amenorrhea; and as being postmenopausal if they report amenorrhea for 12 consecutive months or more (Guthrie et al., 2003).

For women with a normal menstrual cycle, the ovaries produce oestradiol, testosterone and progesterone in a cyclical pattern under the control of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) which are both produced by the pituitary gland (Beckmann et al., 2010). Blood oestradiol levels are usually well preserved until the late perimenopause, presumed to be in response to elevated FSH levels (Burger, 1994).

Menopause marks the end of a woman's natural reproductive life. The transition from a potential reproductive to a non-reproductive state is the result of a reduction in female

hormonal production by the ovaries (Beckmann et al., 2010). Initially, the menstrual cycle lengths become irregular, and FSH concentrations rise as a result of the decreased levels of ovarian hormones (Grady, 2006; Nelson et al., 2008). As perimenopause progresses, hormone levels are significantly varied with estrogen levels falling and FSH levels increasing (Grady, 2006). After perimenopause, the ovaries do not produce estradiol or progesterone but continue to produce testosterone. Moreover, menopause is based on the natural or surgical cessation of oestradiol and progesterone production by the ovaries, while estrogen will continue to be produced in other tissues, not only the ovaries, but also in bone, blood vessels and estradiol in peripheral fat tissue (Simpson & Davis, 2001; Grady, 2006; Nelson et al., 2008). The change of women's hormone levels can cause a number of menopause-related symptoms for a period of time, but not all menopausal women view these symptoms as a 'medical condition' requiring treatment, even when experiencing symptoms.

1.4.2 Common menopause-related symptoms

The drop in hormone levels of mid-age women produces a number of menopause-related symptoms. The most common symptoms are hot flushes, night sweats, insomnia, anxiety, depression, vaginal dryness/vaginal discharge, back pain, joint pain, urinary incontinence, headaches, tiredness, and palpitations (Dennerstein et al., 1993). It is worth noting that a small proportion of menopausal women have none or only a few of these symptoms, but most women experience different levels of severity of one or more menopause-related symptoms (National Institutes of Health, 2005). The majority of women will not experience all of these symptoms, and symptoms vary from woman to woman in the light of different severity levels and duration (NHMRC, 2005).

Vasomotor symptoms (hot flushes and night sweats)

Vasomotor symptoms, including hot flushes and night sweats, are reported at greatest frequency in menopausal women and are the most closely associated menopause-related symptoms (Shifren et al., 2014). The general duration of these two symptoms is around 6 months to 2 years. However, some menopausal women experience hot flushes and/or night sweats for more than 10 years after perimenopause (Shifren et al., 2014; Avis et al., 2015). Hot flushes (also known as hot flashes) refer to the feeling of warmth over the upper body (i.e. face, neck, and chest) (Nelson et al., 2008). Hot flushes are

often accompanied by sweating at night and followed by a chill, mostly occurring in the perimenopause and postmenopause stages (Berecki-Gisolf et al., 2009; Archer et al., 2011). The mechanism of vasomotor symptoms in menopause is still not fully understood (Nelson et al., 2008). It is noteworthy that hot flushes only need to be treated if they disrupt a woman's sleep and strongly affect her quality of life (Shifren et al., 2014).

Sleep disturbance

Menopause-related sleep disturbance is associated with vasomotor symptoms, history of primary insomnia, and surgical menopause (Australasian Menopause Society, 2014; Lampio et al., 2014). To be specific, hot flushes and night sweats negatively affect women's sleep, and sleep disturbance may be a consequence of the vasomotor symptoms (Lampio et al., 2014). Sleep disturbance is common in perimenopausal women and women with surgical menopause, and is characterized by a difficulty in falling asleep with concomitant early and/or frequent awakenings (Kravitz et al., 2003; Ameratunga et al., 2012). The variation of hormone levels may play a role in insomnia (Australasian Menopause Society, 2014).

Anxiety and depression

Anxiety and depression are the main menopause-related psychological complaints (Utian, 2005). Hot flushes, profuse sweats, and/or sleep disturbance may cause anxiety, probably due to women's erratic hormonal fluctuation disrupting their monthly hormonal rhythm and affecting women's feelings. Unpredictable hot flushes and sweating in a social setting or work place may cause severe anxiety for menopausal women (Utian, 2005; Terauchi et al., 2013). Furthermore, the severity level of vasomotor symptoms is significantly associated with the severity level of depression. Although depression affects menopausal women's quality of life and decreases their well-being, most of these women often do not progress to severe depression (Shifren et al., 2014). Nevertheless, women with a history of clinical depression prior to menopause and/or postpartum depression seem to be vulnerable to recurrent depression during perimenopause (North American Menopause Society, 2015b).

Vaginal dryness/vaginal discharge

Vaginal dryness or abnormal vaginal discharge, the main cause of painful intercourse, is reported by many perimenopausal and postmenopausal women (Grady, 2006). Atrophic symptoms affecting the vagina and lower urinary tract are often progressive and generally worsen with ageing (Sturdee et al., 2010). Vaginal dryness/discharge may attribute to low estrogen concentrations (Nelson, 2008; Nappi et al., 2013; Shifren et al., 2014). These symptoms impair the quality of life of menopausal women as well as their partners', while a proportion of these women are reluctant or embarrassed to discuss this symptom with healthcare practitioners.

Back pain and joint pain

Perimenopausal and postmenopausal women report a wide range of musculoskeletal symptoms, and are recognized as a population particularly susceptible to back pain and/or joint pain (Mitchell & Woods, 2010). Back pain and joint pain affect menopausal women's physical functioning in daily life and thus significantly worsen their quality of life (Ahn & Song, 2009; Braden et al., 2012). Menopause-related back pain and joint pain complaints have been shown to be associated with a woman's age and decreased bone mineral density (Dugan et al., 2006; Roux et al. 2007).

Urinary incontinence

Urinary incontinence refers to the involuntary leakage of urine, and is a common complaint of women of all ages (Cody et al., 2012). However, the prevalence of urinary incontinence increases with age (Shifren et al., 2014). Mood symptoms, chronic cough, obesity, lower urinary tract symptoms and a previous history of hysterectomy are all risk factors for urinary incontinence in menopause (Minassian et al., 2003). Although menopause-related urinary incontinence influences women's quality of life, some of these women have been found not to consult healthcare providers for these symptoms due to embarrassment (Minassian et al., 2003; Shifren et al., 2014).

Headaches

Headaches are one of the most burdensome conditions of the nervous system amongst women and are prevalent during perimenopause (MacGregor, 2009; WHO, 2012). In general, the occurrence of headaches is easily affected by menstruation and hormonal fluctuations (MacGregor, 2009). It is notable that hormone therapy may improve or

worsen headaches and migraine (Shifren et al., 2014). Hormonal headaches typically cease with the arrival of menopause, when hormone levels are consistently low (North American Menopause Society, 2015c).

Tiredness

A proportion of perimenopausal women and postmenopausal women who experience sleep problems and/or frequent hot flushes feel tiredness (Brady, 2006). Depression and/or anxiety are another common cause of insomnia at night concurrently with fatigue during the daytime (Alexander et al., 2007). In addition, research has also found the significant association between menopause and chronic fatigue syndrome, with the history of hysterectomy and oophorectomy being an indicator for menopausal women's feeling of unusual tiredness (Boneva et al., 2015).

Palpitations

Many women complain of heart palpitations during the perimenopause period (Rosano et al., 1996). Little research has been conducted about this phenomenon. However, the menopause-related palpitations have been reported to be related to hot flushes/night sweats, with hormonal fluctuations potentially influencing heart rate in the absence of hot flushes (Harvard Medical School, 2009).

Apart from the common menopause-related symptoms, a number of long-term conditions are prevalent amongst menopausal women, such as osteoporosis, arthritis, cardiovascular diseases, diabetes, asthma, and breast cancer (Shifren et al., 2014). Although the incidence of asthma does not clearly increase after menopause, lung volumes tend to decline and pulmonary symptoms become prevalent (Shifren et al., 2014). Osteoporosis is a common postmenopausal condition which impacts upon women's quality of life and increases the risk of fracture, which can in turn lead to heavy ongoing healthcare service load and economic burden for the family (Gallagher & Levine, 2011). The risk of osteoporosis-induced fracture increases with menopausal women's age, especially in those older than 65 years (Gass & Dawson-Hughes, 2006). The estrogen deficiency that occurs when women undergo menopause may cause bone loss (Gass & Dawson-Hughes, 2006). Cardiovascular disease remains the leading cause of death in women (North American menopause society, 2015d). The incidence of

cardiovascular disease increases prominently in postmenopausal women due to the drop in estrogen levels (Schenck-Gustafsson et al., 2011).

Menopause-related symptoms largely affect menopausal women's quality of life. The duration and impact of these menopause-related symptoms differ markedly between persons. Information on common menopause-related symptoms as well as accompanied chronic conditions is included in the analyses of this thesis which is presented in section 3.2.

1.4.3 Natural menopause VS surgical menopause

In addition to the importance of symptoms experienced by menopausal women for the understanding of menopause care, menopausal status is another factor influencing menopausal women's healthcare utilisation. There are two primary types of menopause: natural menopause and surgical menopause. The definition and mechanism of natural menopause have been outlined in section 1.4.1. Surgical menopause can occur at any age before spontaneous menopause. The potential positive effects of surgical menopause include the reduced risk of ovarian cancer and the alleviation of pelvic pain for women with endometriosis (Shoupe et al., 2007). Conversely, women with surgical menopause may experience sudden and more severe menopause-related symptoms, in particular of vasomotor symptoms and vaginal dryness/discharge and/or may suffer increased risk of osteoporosis and cardiovascular disease compared to women with natural menopause (Australasian Menopause Society, 2013).

Surgical menopause is commonly performed at the time of oophorectomy with hysterectomy or at the time of oophorectomy only (Australasian Menopause Society, 2013). Oophorectomy is the most common cause of induced menopause, while hysterectomy can terminate the menstrual periods (Shifren et al., 2014). Many gynaecologists routinely recommend the removal of ovaries at the time of hysterectomy for postmenopausal women and suggest this surgical treatment to perimenopausal women (Brand, 2011). Recently, researchers have proposed the importance of distinguishing the different conventional medical treatments between women with hysterectomy and women with oophorectomy (oophorectomy only and oophorectomy with hysterectomy) and suggest comparing the conventional treatment outcomes

between women with natural menopause, hysterectomy, and oophorectomy via longitudinal data analysis for future instructions in clinical management of menopause-related symptoms (Faubion et al., 2015).

Natural menopause allows women to gradually adjust to the biological and emotional changes, whereas women with surgical menopause need to adapt to a new hormonal balance (Burrel et al., 2010). Compared to natural menopause, surgical menopause causes a sudden withdrawn of estrogen, progesterone, and androgens, and an immediate transformation to postmenopause on the day of surgery. The abrupt loss of ovarian hormones are associated with more severe and prolonged menopausal symptoms such as hot flushes, depression, anxiety, vaginal dryness, compared to natural menopause. (Burrel et al., 2010; Chubaty et al., 2011) Also, surgical menopause is associated with increased risks of cardiovascular disease, osteoporosis, and sexual dysfunction. Conventional treatment of menopause-related symptoms is HRT, which are also prescribed for women with surgical menopause. HRT can have an effect on the reduction of menopause-related symptoms' duration and severity level, on the protection of bone density, and on the quality of life after surgical menopause (Burrel et al., 2010). More details of the function and usage of HRT have outlined in section 1.5.2.

Overall, surgical menopause is different from natural menopause, especially for the variation of menopause-related symptoms and conditions. Therefore, menopausal status is an important factor to consider when studying the utilisation of CAM in menopause and may influence menopausal women's choice of treatment option. However, only a few studies have included women with hysterectomy and women with oophorectomy in the analyses of CAM use (Avis et al., 2009; Burrel et al., 2010).

1.4.4 Economic influences on menopause care

Women with both natural menopause and surgical menopause typically experience one or more menopause-related symptoms. The costs related to the management of menopause-related symptoms or long-term conditions undoubtedly cause a significant financial burden for the menopausal women (Kleinman et al., 2013). A previous study shows that health-related costs in the group of women with menopause-related

symptoms were much higher, with the frequency of outpatient visits being greater than those women without menopause-related symptoms (Sarrel et al., 2015).

The health-related costs of menopause care involve four components. Firstly, as discussed in section 1.3.2, menopausal women may buy common over-the-counter drugs with medications prescribed for specific chronic conditions (e.g. analgesics for headache; anxiolytics and antidepressants for anxiety and depression). Secondly, costs for conventional practitioner may include the initial visit to a GP, follow-up visits to a specialist doctor in the field of menopause care, telephone calls, laboratory testing, and consultations with specialist doctors of other medical fields (e.g. psychologists, psychiatrists, and neurologists). Thirdly, costs for conventional therapies may include initial and follow-up visits to providers for diagnosis and medications, telephone calls, and purchase of hormonal medications. Fourthly, many menopausal women have a cost for CAM providers and provision, with associated visits, telephone calls and purchase of CAM products (Utian, 2005; Kleinman et al., 2013; Avis et al., 2015).

1.5 Overview of menopause care provision and providers in Australia

Given the diversity of menopause-related symptoms amongst women at different menopausal status and the miscellany of treatment options, the thesis provides a brief overview of each of the conventional and CAM modalities typically used for menopause care.

1.5.1 Conventional menopause care providers

Women approaching menopause or suffering from one or more menopause-related symptoms outlined above should ask healthcare providers for information on the treatments that are available to help manage the symptoms. The provision of conventional menopause care in Australia mainly consists of two types of professional groups, including GPs and specialist doctors (SA Health, 2015). Providers' type is shown to be associated with the prescribing frequency of HRT (Newton et al., 2010). The most common places for women to receive information on menopause care are a GP's clinic, women's health centres, and specific menopause clinics (Greenblum et al., 2013). The details of both GPs and specialist doctors concerning the provision of menopause care are described below.

1.5.1.1 General practitioners

In the Australian healthcare system, GPs are the first contact for most of Australians when they seek medical treatments and are the main professional group for the delivery of primary health services to women (Murtagh & Hepworth, 2003). GPs provide consultation to women, recommend treatments for the management of symptoms, and may further refer women to a specialist doctor or a CAM practitioner, and order diagnostic tests (AIHW, 2014). As mentioned above (see section 1.3.3), Medicare generally covers 85% of individuals' costs for visiting a GP unless the patient is bulk billed.

1.5.1.2 Specialist doctors

Specialist doctors commonly work in the private sectors (Lee et al., 2011). In the context of menopause care, gynaecologists and endocrinologists are the two main types of specialist doctors in Australia. Gynaecologists refer to a group of specialist doctors treating the health of women's reproductive system via medications and surgeries. Endocrinologists refer to a group of specialist doctors who specializes in treating hormonal problems (Australasian Menopause Society, 2014). Menopausal women are more likely to consult with specialist doctors regarding the choice of HRT compared to consulting with GPs (Newton et al., 2010; Devi et al., 2013).

1.5.2 Conventional menopause care treatments

Hormone replacement therapy (HRT), oral contraceptive pills (OCPs), and selective serotonin reuptake inhibitors (SSRIs) and norepinephrine reuptake inhibitors (SNRIs) prescribed by either GPs or specialist doctors are the most frequently used conventional treatments for the management of menopause-related symptoms (Australasian Menopause Society, 2012; De Villiers et al., 2013). The current conventional provision of menopause care has been debated as menopausal women are balancing the benefits and possible risks of these treatment options to themselves. Each of these treatments is discussed in more detail below.

1.5.2.1 Hormone replacement therapy

HRT (also named hormone therapy), estrogen with or without progestin, is the first-line and most common conventional medical treatment for most menopause-related symptoms (De Villiers et al., 2013). Estrogen alone is appropriate in women undergone hysterectomy and estrogen plus progestogen is required in the presence of a uterus (Anderson et al., 2003; Anderson et al., 2012). However, results from RCTs drawn from a large-population study conducted in US - Women's Health Initiative (WHI) - which is designed to examine the long-term HRT efficacy for postmenopausal women have raised widespread concern about the side effects of HRT since the last decade (https://www.whi.org/).

Routine acceptance and use of HRT for symptomatic natural menopausal women was questioned according to the outcomes of a series of trials from this study. Due to the side effects such as increased incidence of venous thromboembolism, stroke, ischemic heart disease, and breast cancer following HRT use, many practitioners and symptomatic menopausal women re-considered their future use of hormone therapy (Wassertheil-Smoller et al., 2003; Stuenkel et al., 2012). Consequently, the findings of WHI have led to a continuing decline in the use of this conventional intervention to date (Steinkellner et al., 2012). A recent population-based study on HRT use during 1999-2010 reports that the prevalence of HRT falls sharply from 2003 and continues to decline year on year after the release of the WHI findings (Sprague et al., 2012).

According to the "global consensus statement on menopausal hormone therapy", it is generally accepted that HRT, for natural menopausal women who are younger than 60 years or within 10 years after menopause, is the most effective treatment for vasomotor symptoms and the appropriate treatment for the prevention of osteoporosis-related fractures (De Villiers et al., 2013). HRT may also decrease the incidence of coronary heart disease in natural menopausal women younger than 60 years of age and within 10 years of menopause (De Villiers et al., 2013). For menopausal women's safety, the International Menopause Society suggests HRT use to be: individualised; based on symptoms and the need for prevention; based upon the woman's preferences and expectations; and take into account important personal and family medical histories (De Villiers et al., 2013; Shifren et al., 2014). Provided that a natural menopausal

woman older than 60 years has been made aware of the possible risks of HRT by a healthcare provider or others, only this woman with persistent troublesome menopause-related symptoms in particular vasomotor symptoms, or identified by her conventional provider that benefits of menopause-related symptoms relief outweigh the risks, then providers can prescribe HRT at the lowest effective dose in the shortest period (Grady, 2006; Shifren et al., 2014).

Consistent with natural menopausal women, women with hysterectomy with or without oophorectomy were also found to be concerned about the health risks of the use of HRT (Burrel et al., 2010). Essentially, the WHI reported the increased risk of stroke and heart attack in women with the history of hysterectomy, whilst there has been no finding published regarding the risk of blood clots and breast cancer for these women (https://www.whi.org/). It is worth mentioning that estrogen-only therapy, outlined in the "global consensus statement on menopausal hormone therapy", is effective and appropriate for women with hysterectomy, while natural menopausal women must use estrogen with progestogen therapy for the management of symptoms. Estrogen-progestogen therapy, if used for three to five year, poses an increased risk of developing breast cancer. However, there is no consensus on HRT regimens for menopausal women who underwent oophorectomy (Australasian Menopause Society, 2013).

1.5.2.2 Oral conceptive pill

Oral contraceptive pills are used for menstruation regulation and contraception, and primarily prescribed to perimenopausal women with the need of both protection against unwanted pregnancy and relief of menopause-related symptoms (i.e. vasomotor symptoms and uterine bleeding) (Hardman & Gebbie, 2009). Despite the natural decline of fertility with age, women are at risk of pregnancy for up to one year after the last menstrual period over the age of 50 years (Bateson et al., 2012). As stated by the guidelines on OCPs from the Australasian Menopause Society (2015) and The North American menopause society (2010), menopausal women are suggested to continue to take OCPs for two years after their last period if they are younger than 50 years and for one year after the last period if they are older than 50 years (North American Menopause Society, 2010; Australasian Menopause Society, 2015a).

The major benefit of OCPs is to reduce the risk of ovarian cancer, relieve menopause-related hot flushes and vaginal dryness, and improve bone health (Australasian Menopause Society, 2015a). Meanwhile, mood disturbance has been identified as a main side effect of OCP and is of such concern to many women that it has resulted in their discontinuation of use (Sanders et al., 2001). In addition, OCPs should be used with caution in older women who smoke, are obese, with contraindications to estrogen, or have specific risk factors for cardiovascular disease (North American Menopause Society, 2010; Australasian Menopause Society, 2015a).

It is important to note that although OCPs contain a low dose of estrogen and progestogen hormones, HRT products should not be considered equal to OCPs, as HRT will not prevent a woman from becoming pregnant (Australasian Menopause Society, 2015a). A low dose of OCPs are appropriate treatment option for women with non-continuous periods to manage premenopause-related symptoms (National Health Medical Research Council, 2005).

1.5.2.3 Selective serotonin reuptake inhibitors and serotonin norepinephrine reuptake inhibitors

Selective serotonin reuptake inhibitors (SSRI) and norepinephrine reuptake inhibitors (SNRI) are the most frequently prescribed antidepressant medications for both menopausal women and the general population suffering from depression (Pizzi et al., 2011). Some SSRIs (e.g. paroxetine, citalopram, and fluoxetine) and SNRIs (e.g. desvenlafaxine, duloxetine, and venlafaxine) may be able to decrease the vasomotor symptoms in postmenopausal women (Joffe et al., 2013; Joffe et al., 2014). It is worth noting that the SSRI, paroxetine, is the first non-hormonal medications approved by the US government for the management of vasomotor symptoms (Grady, 2006; Shifren et al., 2014). However, consistent with HRT guidelines, the use of SSRIs or SNRIs for vasomotor symptoms should be individualized based on a comprehensive benefit-risk assessment (Shifren et al., 2014). Moreover, the use of SSRI and SNRI medications should not be taken with any other antidepressants (used for the management of hot flushes), to avoid the occurrence or recurrence of breast cancer (Lash et al., 2010; Australasian Menopause Society, 2015b).

Overall, a substantial proportion of women experiencing menopause-related symptoms visits GPs and/or specialist doctors, and take HRT, OCPs, and/or SSRIs and SNRIs medications for the relief of symptoms. Meanwhile, many menopausal women would prefer to choose CAM approaches (non-hormonal therapies) to manage their symptoms, largely in response to the potential side effects of HRT (Brockie, 2005; Rees, 2009). Furthermore, some specialist doctors have reported to be interested in receiving training in the role of vitamins and/or minerals for the treatment of menopausal symptoms, thus enabling them to make informed recommendations to menopausal women in their clinical practice (Coleman et al., 2007).

1.5.3 Complementary and alternative medicine menopause care provision and providers

As mentioned previously, CAM use is common amongst menopausal women for the treatment of menopause-related symptoms. A number of university and vocational level courses in Australia provide the study of CAM practices with Bachelor and Masters Degrees (WHO & AIHW, 2012). Nine types of CAM modalities, including practitioner groups (massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists) and therapies or products (including vitamins/minerals, yoga/meditation, herbal medicines, aromatherapy oils, and Chinese medicines) are discussed in details below.

1.5.3.1 The role and practice of massage therapy during menopause

Massage therapy refers to a manual practice consisting of various techniques and disciplines, with the focus of treating muscles, joints, and tendons (Australian association of massage therapists, 2012). Massage therapists are the practitioners who manipulate muscles, joints, and connective tissues to treat a symptom or condition and/or promote relaxation (Australian Association of Massage Therapists, 2012). Massage therapists may use aromatherapy oils with the manipulation to enhance relaxation. The effect of massage therapy mostly depends on the skills of massage therapists (NCCIH, 2015a).

Massage therapists are self-regulated in Australia. Private health insurance rebates for clients and professional indemnity insurance requires massage therapists to be members

of a professional association. Individuals, including menopausal women, generally visit a massage therapist for reasons of sleep disturbance, anxiety, and musculoskeletal conditions (Sherman et al., 2005; Australian Bureau of Statistics, 2009).

1.5.3.2 The role and practice of naturopathy and herbalism during menopause

Naturopathy refers to a comprehensive system of healthcare based on several philosophies, including *primum non nocere* (first do no harm), *vis naturae medicatrix* (the healing power of nature), *tolle causum* (finding the cause), and *docere* (doctor as teacher) (American Association of Naturopathic Physicians, 2009). Naturopaths consider every person has an innate healing ability and utilise a number of practices to enhance this ability (NCCIH, 2015b). Although a number of the therapeutic tools are used by naturopaths, they are likely to primarily apply vitamins/minerals and herbal medicines to clients, and spend a similar duration of time in consultations with individuals to naturopaths, herbalists and naturopaths are discussed together in this study (Busse et al., 2005).

Naturopathic medicine and herbalism in Australia is a self-regulated profession (Wardle, Steel & Adams, 2012). Menopause appears to be an influential factor for consultation with an herbalist or naturopath in Australia (Adams et al., 2007). Phytestrogens, the plant estrogens, is frequently used by naturopaths for the treatment of menopause-related symptoms. The use of this herb may partly explain the high prevalence of naturopathy in menopause (Cramer et al., 2003).

1.5.3.3 The role and practice of chiropractic/osteopathy during menopause

There is considerable overlap between chiropractors and osteopaths in the types of conditions treated and training received in the diagnosis and management of musculoskeletal conditions (Engel et al., 2014). As such, these two professions - chiropractors and osteopaths - are discussed together in this study. Chiropractic and osteopathy mainly manipulates the spine or uses a device or tool to apply a controlled force to some joints or strengthen the musculoskeletal system by manual treatment techniques (NCCIH, 2012). In Australia, these two CAM professions are covered by the private health insurance.

Chiropractors/osteopaths in Australia are regulated by the Chiropractic Board of Australia and Osteopathy Board of Australia respectively, which are both overseen by AHPRA. Australia is one of the few countries in which chiropractic is taught in government funded universities (Brown et al., 2013). Three institutions in Australia are approved to provide chiropractic programs, all of which require the students to complete 5 years' study (Chiropractic Board of Australia, 2012). In addition, the standards for registered osteopaths include at least 4 years full time study at Bachelor level or higher, or its equivalent (Australian and New Zealand Osteopathic Council Ltd, 2010). Chiropractic and osteopathy in menopause care are mainly used for the management of menopause-related musculoskeletal symptoms with a particular focus on the prevention options for osteoporosis (Jamison, 2004).

1.5.3.4 The role and practice of vitamins/minerals during menopause

Vitamins are organic compounds which the human body requires for normal functioning or maintaining well-being, including vitamin A, vitamin C, vitamin D, vitamin E, vitamin K, and folate, vitamin B6, vitamin B12, biotin, thiamine, riboflavin, and pantothenic acid (Harvard School of Public Health, 2015). Minerals are substances found in food that the human body needs for growth and health, including water, sodium, potassium, chloride, calcium, phosphate, sulphate, magnesium, iron, copper, zinc, manganese, iodine, selenium, and molybdenum.

The majority of menopausal women perceived vitamins/minerals to be effective in promoting their overall health, and that these two types of CAM products will neither cause side effects nor interact with other medications (Daoust et al., 2006). The most commonly used vitamin/mineral in menopause care is calcium with the role of improving bone health, in the presence of adequate vitamin D status. There is solid support for the use of calcium supplements by perimenopausal and postmenopausal women (North American Menopause Society, 2006).

1.5.3.5 The role and practice of yoga/meditation and meditation during menopause

Yoga and meditation are practices sharing the same feature – mindfulness practice. Mindfulness practice represents diverse techniques and culture originating from India, assisting clients to manage their health using a number of therapeutic tools. These tools

include asanas (postures), pranayama (breath work), mudras, relaxation, dietary advice (including vegetarian dietary choices), and lifestyle counselling (Yoga Australia, 2012). Yoga is a mind-body therapy combining breathing exercise, a set of postures, and meditation techniques to calm the nervous system and thus balance body and mind (NCCIH, 2015d).

Yoga instructors are self-regulated and their registrations are through professional associations. Eligible yoga instructors are required to finish a minimum of 350 hours training and 12 months of practice (Yoga Australia, 2012). Yoga has been utilised as a therapeutic tool to achieve positive health and to control diseases (Cramer et al., 2012; Newton et al., 2014). For example, yoga therapy appears to have no effect on relieving hot flushes or night sweats, but shows some evidence in relieving sleep disturbance in menopausal women (Newton et al., 2014).

1.5.3.6 The role and practice of herbal medicines during menopause

Herbal medicines refer to herbs, herbal materials, and raw/finished herbal products containing active ingredients in the forms of liquid, tablets and capsules, which are sold as over-the-counter products. Some herbal medicines have been reported to have side effects (WHO, 2000; WHO & AIHW, 2012; Posadzki et al., 2013). Herbal medicine is a chief therapeutic tool for naturopaths and herbalists (Bensoussan et al., 2004).

Herbal medicines are regulated by the TGA in Australia. Herbal medicines are generally rated as one of the most common CAM therapies used by menopausal women. However, there is no convincing evidence regarding the efficacy of any herbal medical product in the treatment of menopause-related symptoms (Huntley & Ernst, 2003; NHMRC, 2005). The herb-drug interaction is a vital healthcare issue which must be considered when using herbal medicines for the treatment of menopause-related symptoms (Dog et al., 2010).

1.5.3.7 The role and practice of aromatherapy during menopause

Aromatherapy oils refer to a therapeutic method using essential oils from herbs or plants (Pubmed Health, 2005). The majority of aromatherapy use in Australia is through self-prescription and aromatherapy oils are readily available in pharmacies, health food

stores and supermarkets. The effect of aromatherapy massage in menopause care is found to be related with the techniques on the nervous system both through olfactory stimulation with the fragrance of essential oils and through tactile sensation by the therapist's manipulation (Murakami et al., 2005). Evening primrose is one of the recommended aromatherapy oils for menopausal women with unclear mechanism of action (Farzaneh et al., 2013).

1.5.3.8 The role and practice of traditional Chinese medicine during menopause

Traditional Chinese medicine is a system of primary healthcare that originates from China and holds a holistic and unique diagnosis approach to understanding disease development and normal functions (Australian Acupuncture and Chinese Medicine Association Ltd, 2011a). TCM practitioners utilise various treatments including Chinese herbal medicines, acupuncture, massage (Tui Na), cupping, Tai Chi, and diet therapy (Australian Acupuncture and Chinese Medicine Association Ltd, 2011a). Both Chinese herbal medicines and acupuncture therapy are common CAM modalities in Australia and worldwide (http://www.chinesemedicineboard.gov.au/). Acupuncturists and Chinese herbal medicines practitioners are registered practitioners which are overseen by AHPRA (see section 1.3.3.1).

1.5.3.8.1 Chinese herbal medicines

Chinese herbal medicines include thousands of medicinal substances such as different parts of herbs (leaves, roots, flowers, and fruits), minerals, and animal products, which may be given as raw materials, powders, granules or teas (NCCIH, 2015c). Chinese herbal medicines are predominantly prescribed by Chinese herbal medicine practitioners, either in the form of a single herb or in the form of formulations. Formulations of Chinese herbal medicines can be dispensed by Chinese herbal dispensing, or be available as finished products such as granules or pills. Many Chinese medicine practitioners adhere to the traditional approach to dispense herbal medicines, and thus are more likely to dispense extemporaneous formulations as a mix of loose dried herbs (Australian Acupuncture and Chinese Medicine Association Ltd, 2011b). However, the traditional method of dispensing loose Chinese herbs is not subject to the regulations required by the TGA. This may increase safety concerns for the use of Chinese herbal medicines (Ernst, 2002). A literature review focusing on the efficacy of

Chinese herbal medicines for menopause-related symptoms suggests most of the relevant studies are conducted with poor methodology and it is difficult to conclude the efficacy of Chinese herbal medicine in menopause care due to mix findings (Xu et al., 2012).

1.5.3.8.2 Acupuncture

Acupuncture is a treatment that involves inserting different-sized needles through the skin to stimulate specific sites (acupuncture points) along the body's meridians and inspire the normal flow of *qi* (Australian Acupuncture and Chinese Medicine Association Ltd, 2011c). Acupuncture is primarily practiced by Chinese medicine acupuncturists in Australia (Wardle, Adams, & Sibbritt, 2013b). Meanwhile, some conventional primary care professions (e.g. GPs) are incorporating acupuncture into their treatment portfolio (Wardle et al., 2013c).

Menopause is one of the most commonly treated gynaecological conditions amongst Australian acupuncturists (90%) (Smith et al., 2014). Further, acupuncture is increasingly used by women with menopause-related hot flushes. A literature review indicated that there is explicit evidence regarding the effectiveness of acupuncture for relieving surgical menopause-related hot flushes while mixed findings are shown on the effectiveness of acupuncture for the reduction of natural menopause-related hot flushes (Alraek & Malterud, 2009; Borud & White, 2010).

1.6 Chapter summary

This chapter reviewed detailed background information on the wider context of CAM, wider context of menopause care/management, general CAM use and CAM users' characteristics, common menopause-related symptoms, menopausal status, CAM practitioner registration, CAM products regulation, and private health insurance coverage of CAM. The overview of all types of conventional and CAM providers and CAM provision in menopause care in the context of Australian health system were also presented in this chapter. The chapter highlighted the fact that little knowledge is available on the variety of consultations with CAM practitioners and use of CAM practices for menopausal women regarding specific menopause-related symptoms in

Australia, despite CAM utilisation amongst women with menopausal symptoms being a significant important public health and health service issue.

CHAPTER 2 LITERATURE REVIEW

Chapter 1 provided the overall thesis objectives, detailed aims, and research questions as well as relevant background information.This Chapter provides a critical review of the literature, by synthesising the relevant empirical literature on: the use of CAM by menopausal women; CAM users' prevalence and their characteristics; menopausal women's decision making with regards to CAM use; and aspects of practitioner-patient communication with regards to CAM use.

This chapter provides an overview and comprehensive understanding of the literature published over the previous 10 years concerning menopausal women's use of complementary and traditional medicine, it identifies research gaps for further investigation, and presents a thorough framework for the remainder of the thesis. The published critical reviews presented cover the following two topics: (i) the use of a wide range of CAM modalities by menopausal women, based on literature published in English language; and (ii) TCM use specifically by menopausal women, based on literature published in English and Chinese language (Mandarin).

2.1 Menopausal women's use of complementary and alternative medicine

2.1.1 Introduction

This literature review focusing on CAM use amongst menopausal women has been published in the journal *Menopause*.

Peng, W., Adams, J., Sibbritt, D. W., & Frawley, J. E. (2014). Critical review of complementary and alternative medicine use in menopause: focus on prevalence, motivation, decision-making, and communication. *Menopause*,*21*(5), 536-548.

This is the first ever critical review of international empirical literature reporting the comprehensive summary of menopausal women's use of CAM, including the prevalence of CAM use for menopause, CAM user's characteristics, CAM user's perceptions, CAM user's motivations, and CAM user's communication with healthcare providers.

The review started with the introduction to current therapeutic methods used for menopause, definition of CAM and the effect of CAM for menopause in clinical practice, followed by the prevalence rate and profile of menopausal women who used CAM, the influence of menopausal stages for CAM use, common menopause-related symptoms and reasons for utilising CAM, decision-making for CAM use, and communication between conventional/complementary practitioners and menopausal women regarding CAM use. Discussion of the limitations of this review and several research gaps highlighted were described at the end of this paper.

2.1.2 Critical review of complementary and alternative medicine use in menopause: focus on prevalence, motivation, decision-making, and communication

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REVIEW ARTICLE

Critical review of complementary and alternative medicine use in menopause: focus on prevalence, motivation, decision-making, and communication

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Abstract

Objective: This study aims to undertake the first critical review of complementary and alternative medicine (CAM) use among menopausal women (a term here used to include premenopausal, perimenopausal and postmenopausal women) by focusing on the prevalence of CAM use and CAM users' characteristics, motivation, decision-making, and communication with healthcare providers.

Methods: A comprehensive search of 2002-2012 international literature in the Medline, CINAHL, AMED, and SCOPUS databases was conducted. The search was confined to peer-reviewed articles published in English with abstracts and reporting new empirical research findings regarding CAM use and menopause.

Results: A considerable level of CAM use was observed among women in menopause. Many menopausal women use CAM concurrently with their conventional medicine. However, communication regarding CAM between menopausal women and healthcare providers seems less than optimal, with a demand for further information on the safety and efficacy of medicines. Existing literature is of variable methodological rigor, often presenting small sample sizes and low-quality data collection. Further rigorous research on this topic—including quantitative and qualitative methods using large national samples, where relevant—is required.

Conclusions: The findings of this critical review provide insights for those practicing and managing health care in this area of women's health. Healthcare providers should prepare to inform menopausal women about all treatment options, including CAM, and should be aware of the possible adverse effects of CAM and potential interactions between CAM and conventional medicine among women in menopause who are under their care.

Key Words: Menopause – Complementary and alternative medicine – Prevalence – Consumer profiles – Review.

2.2 Menopausal women's use of traditional Chinese medicine

2.2.1 Introduction

This literature review focusing on TCM use amongst menopausal women has been published in the journal *Climacteric*.

Peng, W., Sibbritt, D. W., Hickman, L., Kong, X., Yang, L., & Adams, J. (2014). A critical review of traditional Chinese medicine use amongst women with menopausal symptoms. *Climacteric*, *17*(6), 635-644.

This paper was conducted as the first critical literature review of the evidence of TCM utilisation amongst menopausal women from the perspective of TCM users and the perspective of TCM practitioners. The beginning of this review elaborated the definition, effect and importance of TCM use for menopausal women. A wide range of findings in TCM users and TCM practitioners were then reported respectively, covering the menopausal women's prevalence of TCM use, characteristics, common menopause-related symptoms, reasons for TCM use, and opinions of TCM use; as well as TCM practitioners' experience in TCM syndrome differentiation with regards to menopausal women. Numerous research gaps and future study directions were also pointed out in the literature review, alongside with the quality appraisal of reviewed papers.

2.2.2 A critical review of traditional Chinese medicine use amongst women with menopausal symptoms

CLIMACTERIC 2014;17:1–10

A critical review of traditional Chinese medicine use amongst women with menopausal symptoms

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Key words: TRADITIONAL CHINESE MEDICINE, MENOPAUSE, WOMEN, SYNDROME DIFFERENTIATION, REVIEW

ABSTRACT

Objectives To provide the first critical review of traditional Chinese medicine (TCM) use amongst symptomatic menopausal women, drawing upon work examining the perspectives of both TCM users and TCM practitioners.

Methods A search was conducted in three English-language databases (MEDLINE, CINAHL and AMED) and three Chinese-language databases (CNKI, VIP and CBM Disc) for 2002–2013 international peer-reviewed articles reporting empirical findings of TCM use in menopause.

Results A total of 25 journal articles reporting 22 studies were identified as meeting the review inclusion criteria. Chinese herbal medicine appears to be the most common therapy amongst symptomatic menopausal women, and vasomotor symptoms and emotional changes are the most frequent symptoms for which TCM is sought. However, evidence regarding the prevalence of TCM use and users' profile in menopause is limited. Existing studies are of varied methodological quality, often reporting low response rate, extensive recall bias and a lack of syndrome differentiation.

Conclusions This review provides insights for practitioners and health policy-makers regarding TCM care to symptomatic menopausal women. More nationally representative studies are required to rigorously examine TCM use for the management of menopausal symptoms. Syndrome differentiation of menopausal women is an area which also warrants further attention.

2.3 Chapter summary

Chapter 2 reviewed the international literature relating to menopausal women's utilisation of complementary and traditional medicine, focusing on the prevalence, motivation, decision-making, and communication of women's use of CAM therapies and products when experiencing menopause-related symptoms. Both critical reviews identified that CAM practices were popular amongst menopausal women and most of these women believed in the effectiveness of CAM therapies/products. However, the CAM users had unsatisfactory relationship with healthcare providers, especially with CAM practitioners, and this may have led to their high usage of self-prescribed CAM therapies/products. These critical reviews also highlighted many significant research gaps that exist in the area of the use of CAM modalities for the treatment of menopausal symptoms.

CHAPTER 3 METHODOLOGY

This chapter provides a general overview of the methodology used in the analyses of secondary data obtained from the Australian Longitudinal Study on Women's Health (ALSWH). This research draws upon data from two recent ALSWH surveys of the middle-aged cohort of women, to conduct quantitative analyses of the use of CAM by women with menopausal symptoms, using cross-sectional and longitudinal data analyses. This chapter also describes the ALSWH questionnaire items, data collection and data management approaches of the ALSWH, as well as the ethical considerations applicable to the ALSWH. The research questions that are addressed (see in the section of 1.5.2) using this methodology and detailed methodology for each of the quantitative journal articles are presented in the relevant results chapter of the thesis.

3.1 Study design

3.1.1 The Australian Longitudinal Study on Women's Health

The Australian Longitudinal Study on Women's Health (ALSWH) is a nationally-representative population-based study of women - providing a research resource of Australian women's health issues through their key life stages (http://www.alswh.org.au/). The ALSWH, which began in 1996, was designed to examine multiple factors influencing women's physical and emotional health and well-being over 20 years (Brown et al., 1999). This prospective cohort study design, by which the same women are followed and regularly surveyed for 20 years, enables researchers to observe changes in women's health and potentially elucidate causal relationships between various factors. Therefore, the ALSWH study builds an evidence base for the Australian Government to help in the development and appraisal of health policies which are most appropriate to women in Australia, and in the planning of women's health services on the basis of long-term and accurate data. Researchers from University of Queensland and University of Newcastle collaborate to manage this study.

Specifically, three age groups of Australian women - 'young' (born 1973-1978), 'mid-age' (born 1946-1951), and 'older' (born 1921-1926) - were randomly selected from the Medicare database in April 1996. The Medicare database is maintained by the Health Insurance Commission and contains the name and address of every Australian citizen and permanent resident. Women from these three age groups were purposely targeted. Women from the

young cohort were in the early stage of adulthood. Women in this age group will typically be commencing employment, developing adult relationships, and even becoming mothers. Women in the mid-age cohort were recruited to mainly examine menopausal transition and the major social and personal changes during middle life. Many older women in Australia were still active in communities, thus the purpose of recruiting women for the older cohort was to examine the social support aspects pertaining to these women and also to assess their continuing healthcare needs. At the baseline survey, a total of 40,394 women agreed to participate in the study: 14,247 women in the young cohort; 13,715 women in the mid-age cohort; and 12,432 women in the older cohort. The summary of the number of participating women for each cohort over time is provided in Table 1.

The findings reported in this thesis were exclusively based on data from the mid-age cohort (i.e. 1946-51 cohort). A more detailed description of the mid-aged women is provided below.

Table 1 Number of participants in the ALSWH surveys by age cohorts, over the period 1996-2012

	Year	Cohort	Age	Participant number
Survey 1	1996	Young	18-23	14,247
	1996	Mid-age	45-50	13,715
	1996	Older	70-75	12,432
Survey 2	1998	Mid-age	47-52	12,338
	1999	Older	73-78	10,434
	2000	Young	22-27	9,688
Survey 3	2001	Mid-age	50-55	11,226
	2002	Older	76-81	8,647
	2003	Young	25-30	9,081
Survey 4	2004	Mid-age	53-58	10,905
	2005	Older	79-84	7,158
	2006	Young	28-33	9,145
Survey 5	2007	Mid-age	56-61	10,638
	2008	Older	82-87	5,561
	2009	Young	31-36	8,199
Survey 6	2010	Mid-age	59-64	10,011
	2011	Older	85-90	4,055
	2012	Young	34-39	8,010

3.1.2 Mid-age cohort of women

3.1.2.1 Sample size

There were 13,715 mid-aged women who completed the baseline survey for the 1946-51 cohort. These participants were shown to be nationally representative of Australian women in the target age range in 1996 (Brown et al., 1999). Retention has been shown to be high in the 1946-51 cohort given that these women consented to participate in the ALSWH study for up to 20 years (Lee et al., 2005). Specifically, subsequent numbers of responders to surveys over time were 12,338 women in Survey 2 (conducted in 1998) with a response rate of 92%; 11,226 women in Survey 3 (2001) with a response rate of 85%; 10,905 women in Survey 4 (2004) with a response rate of 85%; 10,638 women in Survey 5 (2007) with a response rate of 85%; and 10,011 women in Survey 6 (2010) with a response rate of 83% (Table 2). Note that only the two most recent ALSWH surveys of the mid-age cohort collected appropriate data regarding both CAM practitioners and CAM practices use. As such, this study is confined to the analyses of data from Survey 5 and Survey 6.

Table 2 Participation and retention of the 1946-51 cohort over the period 1996-2010

	Survey 2	**Survey 3**	**Survey 4**	**Survey 5**	**Survey 6**
Age in years	47-52	50-55	53-58	56-61	59-64
Eligible at previous survey	13,715	13,605	13,310	12,979	12,694
Ineligible					
Deceased between surveys	50	119	216	327	472
Frailty (e.g. dementia, stroke)	7	20	31	48	67
Withdrawn	209	427	625	873	1,112
Total ineligible	266	566	872	1,248	1,651
Eligible at current survey	13,449	13,149	12,843	12,467	12,064
Non-respondents					
Contacted but did not return survey	254	997	886	995	1,148
Unable to contact participant	857	926	1,052	834	905
Total non-respondents	1,111	1,923	1,938	1,829	2,053
Completed survey	12,338	11,226	10,905	10,638	10,011
Retention rate as % eligible	91.7%	85.4%	84.9%	85.3%	83.0%

3.1.2.2 Questionnaire items

The questionnaire items in Survey 5 and Survey 6 selected for analyses are consistent across both questionnaires and were chosen based on previous research literature. The questionnaire items used are presented in Appendix 1 and Appendix 2. These items explored a wide range of areas of mid-aged women's health issues associated with CAM utilisation, menopausal status, menopause-related manifestations, chronic conditions or diseases, demographic characteristics, and health service use via self-report (see Table 3). The questionnaire items included a variety of response options, including categorical tick-box options and open-ended questions. Whilst it is acknowledged there are limitations pertaining to self-report data, a more detailed discussion of the limitations of survey methodology regarding this study has been presented in Section 5.3.

Health service use

CAM use refers to CAM practitioner visits (Question 13 in Surveys 5 & 6) and self-prescribed CAM practices/products use (Question 14 in Surveys 5 & 6) in this study. Women who reported at least one consultation with a CAM practitioner were defined as CAM practitioner users. Similarly, women who self-prescribed at least one CAM practice/product were defined as self-prescribed CAM users. There are four groups of CAM practitioners for middle-aged women including massage therapists, naturopaths/ herbalists, chiropractors/osteopaths, and acupuncturists. These women were asked to indicate whether they had consulted any CAM practitioner (yes or no) (Figure 1). The options pertaining to self-prescribed CAMs provided to middle-aged women were: vitamins/minerals, yoga or meditation, herbal medicines, aromatherapy oils, and Chinese medicines. The response options for each of these self-prescribed CAMs were never, rarely, sometimes, often. If a women indicated that she used any of these self-prescribed CAMs either on a 'sometimes' or 'often' basis she was considered to be a user of that self-prescribed CAM (Figure 2).

Figure 1 Questionnaire items regarding complementary and alternative medicine practitioners consulted

Q13 Have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?

- Massage therapist

- Naturopath/Herbalist
- Chiropractor/Osteopath
- Acupuncturist

Figure 2 Questionnaire items regarding self-prescribed complementary and alternative medicine use

Q14 How often have you used the following therapies for YOUR OWN HEALTH in the LAST TWELVE MONTHS?

- Vitamins/Minerals
- Yoga or meditation
- Herbal medicines
- Aromatherapy oils
- Chinese medicines

Menopause-related symptoms

Women were asked a question about the menopause-related symptoms they may have experienced, including hot flushes, night sweats, depression, anxiety, headaches/migraines, tiredness, stiff or painful joints, back pain, vaginal discharge, leaking urine, and palpitation (Question 44 in Survey 5 and Question 46 in Survey 6). The response options of symptom frequencies (never, rarely, sometimes, and often) were converted to a binary variable, where self-report of any of the listed menopause-related symptom was shown as 'yes' if a woman indicated 'sometimes' or 'often' and an 'no' if they 'never' or 'rarely'(Figure 3).

Figure 3 Questionnaire items regarding menopause-related symptoms

Q44/46 In the LAST 12 MONTHS, have you had any of the following symptoms:

- Hot flushes
- Night sweats
- Depression
- Anxiety
- Headaches/Migraines
- Tiredness

- Stiff or painful joints
- Back pain
- Vaginal discharge
- Leaking urine
- Palpitation

Menopausal status

In generally, there are two menopausal status types listed in the study – natural menopause and surgical menopause (Question 26 and Question 40 in Surveys 5 and 6, respectively). Two categories of surgical menopause are defined: hysterectomy only (i.e. removal of the uterus) and oophorectomy (i.e. both ovaries removed; and oophorectomy with hysterectomy), whilst three groups are referred to as natural menopausal status, including premenopausal, perimenopausal and postmenopausal (Figure 4). Women were defined as premenopausal if they had menstruated in the last three months and reported no change in menstrual frequency in the last 12 months. The definition of perimenopausal is if a woman reported changes in menstrual frequency or three to eleven months of amenorrhea. Women were defined as postmenopausal if they reported amenorrhea for 12 consecutive months or more (Guthrie et al., 1999).

Figure 4 Questionnaire items regarding menopausal status

Q26 Have you:

- Had a hysterectomy?
- Had a period or menstrual bleeding in the last 12 months?
- Had a period or menstrual bleeding in the last 3 months?

Q40 In the PAST THREE YEARS, have you had any of the following operations or procedures?

- Both ovaries removed (oophorectomy)

Demographic characteristics

Postcodes of residence collected in Survey 5 (Question 50) and Survey 6 (Question 50) are used to classify areas of residence. According to the Australian Standard Geographical Classification, the categories of residence were “major cities”, “inner regional”, “outer

regional", "remote" and "very remote" based on the distance to the closest service centre (AIHW, 2016). For the purpose of analysis in this study, both the categories of remote and very remote and the categories of inner regional and outer regional were combined due to low number of participants in these areas. As such, the residence of the women was categorised into three areas - urban (major cities), rural (regionals), and remote.

In the Australian healthcare system, costs are covered by the public and private sectors. The funding of private health insurance sector comes from both insurance premium payments by members and rebates from the Australian government. CAM treatments such as chiropractic, osteopathic, and acupuncture services are covered by the premium payments by members (http://www.privatehealth.gov.au/). Private health insurance (Question 18b in Surveys 5 and 6) refers to ancillary cover health insurance for CAM services. Ancillary cover health insurance was categorised as either 'yes', 'no-I am covered by Veterans' Affairs'; 'no-because I cannot afford the cost'; 'no-because I do not think you get value for money'; 'no-because I do not think I need it'; 'no-because the services are not available where I live'; or 'no-other reason'. All the response options were combined through a binary category choice - yes/no.

The item concerning the ability to manage on available income (Question 95 in Survey 5 and Question 99 in Survey 6) has five options: it is impossible; it is difficult all the time; it is difficult some of the time; it is not too bad; and it is easy. The response options provided for this question were it is very difficult; it is difficult; and it is not difficult by re-categorising the original options. For example, "it is impossible" and "it is difficult all the time" were re-categorised as "it is very difficult", and "it is not too bad" and "it is easy" were re-categorised as "it is not difficult".

Women were asked about their current marital status (Question 106 in Survey 5 and Question 110 in Survey 6) and highest educational qualification completed (Question 108 in Survey 6). Level of marital status was identified according to the categories of married (registered); de facto relationship (opposite sex); de facto relationship (same sex); separated; divorced; widowed; and never married. After re-categorised these options, the categories of the marital status consist of married/de facto, separated/divorced/widowed, and never married. The

participated women were asked to provide details of their highest qualification according to the following categories: no formal qualifications; school or intermediate certificate (or equivalent); high school or leaving certificate (or equivalent); trade/apprenticeship; certificate/diploma; university degree; and higher university degree. In light of the similar academic information, the options of the highest qualification were re-categorised as no formal qualifications; school or certificate; trade/diploma; and university degree/higher university degree.

Health status

To identify mid-aged women's health services use, the participants were asked to report their frequencies of the consultations with conventional practitioners including GPs and specialist doctors (Question 12 in Surveys 5 and 6). Health status was measured via a number of different questionnaire items.

Women's alcohol consumption (Question 61 in Survey 5 and Question 62 in Survey 6) with eight response options being: I have never drunk alcohol in my life; I never drink alcohol, but I have in the past; I drink rarely; less than once a week; on 1 or 2 days a week; on 3 or 4 days a week; on 5 or 6 days a week; every day, were re-categorised as different levels of risk from alcohol consumption, according to the Australian Guidelines to Reduce Health Risks from Drinking Alcohol (NHMRC, 2009). Women who had no alcohol at all are considered "non-drinkers", including those with the responses of "I have never drunk alcohol in my life", "I never drink alcohol, but I have in the past", and "I drink rarely". Women who had had up to 5 standard drinks per week are considered "low risk alcohol use", including those with the responses of "on 1 or 2 days a week" and "on 3 or 4 days a week". Women who had more than 6 standard drinks per week are considered "moderate/high risk alcohol use", including those with the responses of "on 5 or 6 days a week" and "every day". In terms of smoking status (Question 75 in Surveys 5 and 6), women who smoked "daily", "at least weekly", and "less often than weekly" were combined as a group of 'smokers', while women who never smoke were considered as "non-smokers". In addition, women were asked to indicate if they were currently taking HRT or OCPs with a binary category choice - yes/no (Question 25 in Surveys 5 and 6).

The women were asked to identify if they had been diagnosed with or treated for a chronic illness or condition in the previous three years (to that survey) including diabetes, impaired glucose tolerance, arthritis, heart disease, hypertension, low iron level, asthma, bronchitis, cancer, and osteoporosis (Question 38 in Surveys 5 and 6). For the convenience of data analysis, the options of this questionnaire item, namely the group of osteoarthritis, rheumatoid arthritis, other arthritis and the group of breast cancer, cervical cancer, skin cancer, other cancer, were combined as 'arthritis' and 'cancer', respectively.

Table 3 General description of menopausal women in the sixth ALSWH survey

	Survey 6	
	Frequency	Percent
Menopausal status		
Natural	6,610	66.0%
Oophorectomy	1,141	11.4%
Hysterectomy	2,260	22.6%
Demographic characteristics		
Area of residence		
Urban	3,778	37.8%
Rural	5,875	58.7%
Remote	350	3.5%
Marital status		
Married/de facto	7,637	76.9%
Separated/divorced/widowed	2,039	20.5%
Single	261	2.6%
Highest education qualification		
No formal	4,194	44.3%
School or certificate	2,006	21.2%
Trade/diploma	1,924	20.3%
University degree/higher university degree	1,349	14.2%
Private health insurance		
No	3,976	39.9%
Yes	5,979	60.1%

Available income		
Not difficult	6,243	62.9%
Difficult	2,369	23.9%
Very difficult	1,309	13.2%
Health status		
GP		
Never	490	4.9%
One or two times	3,121	31.3%
More than three times	6,370	63.8%
Specialist		
Never	4,975	50.0%
One or two times	3,248	32.7%
More than three times	1,720	17.3%
Alcohol consumption		
Non-drinker	9,053	91.8%
Low long-tern risk	151	1.5%
Risky/high risk drinker	660	6.7%
Smoking status		
Non-smoker	9,085	91.1%
Smoker	891	8.9%
Diabetes		
No	9,121	92.1%
Yes	781	7.9%
Impaired glucose tolerance		
No	9,625	97.2%
Yes	277	2.8%
Heart disease		
No	9,465	95.6%
Yes	437	4.4%
Hypertension		
No	6,870	69.4%
Yes	3,032	30.6%
Asthma		
No	8,797	88.8%
Yes	1,105	11.2%

Low iron level		
No	9,217	93.1%
Yes	685	6.9%
Bronchitis		
No	9,237	93.3%
Yes	665	6.7%
Osteoporosis		
No	9,200	92.9%
Yes	702	7.1%
Arthritis		
No	6,697	67.6%
Yes	3,205	32.4%
Cancer		
No	8,168	82.5%
Yes	1,734	17.5%
Menopause-related symptoms		
Hot flushes		
No	6,492	65.7%
Yes	3,396	34.3%
Night sweats		
No	7,250	73.6%
Yes	2,601	26.4%
Depression		
No	7,880	79.5%
Yes	2,031	20.5%
Anxiety		
No	7,416	74.9%
Yes	2,480	25.1%
Headaches/Migraines		
No	6,171	62.5%
Yes	3,711	37.5%
Tiredness		
No	5,705	58.1%
Yes	4,109	41.9%
Stiff or painful joints		

No	3,508	35.5%
Yes	6,365	64.5%
Back pain		
No	4,417	44.7%
Yes	5,474	55.3%
Vaginal discharge		
No	9,178	93.3%
Yes	664	6.7%
Leaking urine		
No	7,226	73.1%
Yes	2,654	26.9%
Palpitation		
No	8,054	81.4%
Yes	1,844	18.6%

3.1.3 Cohort study design

A cohort study is a common type of longitudinal study design and one of the quantitative research designs used in HSR; observing the trend of individual groups over time and measuring the detailed data that drive the healthcare use and results of services (Song & Chuang, 2010). Its advantage lies in using the same sample to examine numerous outcomes of risk factors and thus providing information on possible causation and changes and trends in factors of interest over time (Sedgwick, 2014). An attractive feature of the cohort study design is that researchers can focus on measurements made at one point in time on the cohort (i.e. cross-sectional analyses) or multiple measures made on the cohort over time (i.e. longitudinal analyses). The analyses conducted on the ALSWH data and presented in this thesis were both cross-sectional and longitudinal. The combined research method is more applicable, in the scope of HSR approach, given the capacity for sample (e.g. middle-aged women), to determine factors that may be supposed exposures (e.g. menopause-related symptoms) influencing outcomes (e.g. use of CAM therapies or products or consultation with CAM practitioners) in a particular context of the research study (e.g. specific age and menopausal stage).

3.2 Data collection and storage

As mentioned previously, the name and address of every Australian citizen or permanent resident is recorded and maintained in the national Medicare database. The approach to data collection of the ALSWH was to send an invitation to a random sample of Australian women obtained from the Medicare database. Once written consent was obtained, questionnaires were sent by mail to these women. Respondents were responsible for completing the questionnaires and returning them to the ALSWH using the pre-paid return envelopes provided to them. The surveys were scanned and saved as images by the ALSWH staff. The images were then processed to capture the data via Optical Mark Recognition software twice using slightly different levels of mark recognition sensitivity to avoid discrepancies between the results of two data sets. The data were ultimately stored in a password-protected computer. In addition, data cleaning was undertaken and a review of anomalies and statistical outliers was conducted to identify any potential errors.

3.3 Statistical analyses

This quantitative analyses component of this thesis was based on data from two ALSWH surveys (women aged 56-61 years in Survey 5, which was conducted in 2007, and the same cohort women aged 59-64 years in Survey 6, which was conducted in 2010), and utilised a combination of cross-sectional and longitudinal analyses. All statistical analyses were conducted using the statistical software STATA 13, version 1. Statistical significance was set at <0.005 or <0.05 based on different research aim and statistical analysis methods employed.

3.3.1 Cross-sectional analysis

Cross-sectional analyses involve descriptive statistics, bivariate comparisons between the dependent variable of interest and independent variables, and multivariate logistic regression models for binary dependent variables of interest.

The descriptive statistics include frequencies and percentages. Separate prevalence estimates were determined for individual CAM practitioner consultation and self-prescribed CAM use, for the cohort overall and stratified by menopause status. More specifically, the use of each group of CAM practitioners, as well as each type of self-prescribed CAMs for the separate menopause-related symptom at different menopausal status were calculated with 95%

confidence intervals (CI), respectively. Further, the prevalence rates of consultations with a GP and consultations with a specialist doctor, and current use of HRT amongst women at different status were also evaluated.

Bivariate comparisons using Pearson's chi-square tests were performed to examine the associations between: each CAM and conventional medicine use and the categorical menopausal status variable; the associations between consultations with each CAM practitioner group and menopause-related symptoms, stratified on different menopausal status; and the associations between use of each self-prescribed CAM type and menopause-related symptoms, stratified on different menopausal status. Further, a Bonferroni test was employed to adjust for multiple comparisons.

A multivariate logistic regression model was implemented in some of the analyses to examine the association between a dependent binary (outcome) variable and a number of independent (predictor) variables. This method enables the estimation of odds ratios (ORs) by removing the effects of confounding factors (Peat & Barton, 2005). When several predictor variables were under consideration, those with a bivariate p-value of less than 0.25 were entered into a logistic regression model (Hosmer & Lemeshow, 2000). A backward stepwise process was employed to eventually build the most parsimonious model by using a likelihood ratio test. (Jekel et al., 2007). The Hosmer-Lemeshow goodness-of-fit test was further employed to evaluate the fit of the logistic regression models.

3.3.2 Longitudinal analysis

Multivariable Generalised Estimating Equations (GEEs), one of the most commonly used longitudinal data analysis techniques, was used to evaluate factors associated with changes in CAM use over time. Information from Surveys 5 and 6 were used in the GEE models, where the GEE models estimated ORs and 95% CIs of CAM utilisation (both CAM practitioners and practices use) in relation to menopause-related symptoms for women over a three year period. An unstructured correlation matrix was used to correct for the within-subjects correlations.

3.4 Ethical approval

Ethics approval for ALSWH study was gained from the Human Ethics Committees at the University of Queensland (#2010000411) and the University of Newcastle (#H-2010_0031). In addition, ethics approval for the research reported in the thesis was also obtained from the Human Research Ethics Committee at the University of Technology Sydney (#2014000045). A copy of the ethics approval letter is attached to this thesis as Appendix 3. All researchers using ALSWH data are required to sign a "Memorandum of Understanding" and "Confidentiality agreement" prior to obtaining the de-identified data. Note that all the detailed information of ALSWH participants is bound by strict confidentiality and is only maintained by ALSWH staff.

3.5 Chapter summary

Chapter 3 described the methodology used for the quantitative analyses component of this thesis. This study used data from the mid-age cohort of the ALSWH – a large nationally-representative study of Australian women. Statistical analyses were applied to both cross-sectional and longitudinal data to address the identified research aim and questions. The wide range of factors relevant to CAM use amongst the mid-age cohort included in the questionnaires enable comprehensive statistical analyses and thus provides valuable insights to the menopause area. More methodological details are provided in the following results chapters.

CHAPTER 4 RESULTS

All results presented in this Chapter are based on analyses of data obtained from the ALSWH study. Information on the ALSWH has been provided in Chapter 3. This chapter presents detailed results of menopausal women's use of CAM. The overall conventional and complementary/alternative medicine utilisation amongst menopausal women is presented in Section 4.1. Section 4.2 and Section 4.3 of this chapter presents specific cross-sectional analyses on selected forms of CAM practitioners and self-prescribed CAM amongst symptomatic women at different menopausal status, respectively. Matters relevant to the longitudinal analyses, including use of both CAM practitioners and self-prescribed CAM for menopause-related symptoms, are presented in Section 4.4.

4.1 Overview of the use of complementary and alternative medicine for the management of menopause-related symptoms

4.1.1 Introduction

The results contained within this chapter have been published as follows:

Peng, W., Adams, J., Hickman, L., & Sibbritt, D. W. (2014). Complementary/alternative and conventional medicine use amongst menopausal women: Results from the Australian Longitudinal Study on Women's Health. *Maturitas*, *79*(3), 340-342.

The research aims outlined in Chapter 1, Section 1.5.1 require an overall shape of the prevalence of conventional medicine use and CAM use by women at different menopausal status. Therefore, this chapter provides insights into the prevalence of consultations with CAM practitioners and GPs/specialists, as well as use of HRT and self-prescribed CAM amongst women with hysterectomy, oophorectomy and natural menopause, via a HSR approach. This was undertaken to address Research Question 1 and Research Question 2 of the thesis.

Throughout the findings reported below, menopausal women have been identified as high users of CAM (particularly users of self-prescribed CAM) and frequent GP visitors. Examination of the use of conventional medicine will help healthcare providers to be aware of menopausal women's concurrent use of CAM and alert them to possible interactions between CAM herbal products and conventional medications. Further to this, it is important to

understand the symptom-driven CAM use for women with different menopausal status in order to determine the menopause-related symptoms that predict the use of specific forms of CAM.

4.1.2 Complementary/alternative and conventional medicine use amongst menopausal women: Results from the Australian Longitudinal Study on Women's Health

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Short Communication

Complementary/alternative and conventional medicine use amongst menopausal women: Results from the Australian Longitudinal Study on Women's Health

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ABSTRACT

Large population-based studies of complementary and alternative medicine (CAM) and conventional medicine use amongst menopausal women are lacking. This study helps address this gap by analysing data from a nationally representative sample of 10 011 Australian women aged 59–64 years. Overall, 39% of menopausal women consulted CAM practitioners, 75% used self-prescribed CAM, 95% consulted general practitioners (GP) and 50% consulted specialists during the previous year, and 12% were current hormone replacement therapy (HRT) users. Our findings suggest that CAM is a significant healthcare option utilized by women to treat menopausal symptoms, and so requires attention from GPs and specialists.

4.2 A cross-sectional analysis of the utilisation of complementary and alternative medicine practitioners within menopause care

4.2.1 Introduction

The results contained within this chapter have been published as follows:

Peng, W., Adams, J., Hickman, L., & Sibbritt, D. W. (2015). Association between consultations with complementary/alternative medicine practitioners and menopause-related symptoms: a cross-sectional study. *Climacteric*, *18*(4), 551-558.

The high prevalence of CAM use by menopausal women identified in the previous section is the baseline evidence for determining whether the associations between CAM provider consultations and menopause-related symptoms are statistically significant and whether these associations amongst menopausal statuses differ. As such, this section examined consultations with four groups of commonly used CAM practitioners (including massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists) and a broad range of menopause-related symptoms (including hot flushes, night sweats, depression, anxiety, tiredness, stiff or painful joints, back pain, vaginal discharge, leaking urine, headaches, and palpitations) by hysterectomy status, oophorectomy status and natural menopause status, from a nationally representative sample of menopausal women. This was undertaken to address Research Question 3 of the thesis.

This cross-sectional analysis shows a substantial amount of consultation with CAM practitioners amongst menopausal women. Further, the literature shows that women consult specific CAM practitioners for particular menopause-related symptoms, and that differences exist for women with different menopausal status.

4.2.2 Association between consultations with complementary/alternative medicine practitioners and menopause-related symptoms: a cross-sectional study

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Association between consultations with complementary/alternative medicine practitioners and menopause-related symptoms: a cross-sectional study

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Key words: COMPLEMENTARY AND ALTERNATIVE MEDICINE, CAM PRACTITIONER, MENOPAUSE, HYSTERECTOMY, OOPHORECTOMY, SYMPTOMS

ABSTRACT

Objectives To examine the associations between consultations with complementary and alternative medicine (CAM) practitioners and menopause-related symptoms.

Methods A cross-sectional survey of a nationally representative sample of 10 011 women aged 59–64 years from the Australian Longitudinal Study on Women's Health, conducted in 2010. Women, including those with hysterectomy, oophorectomy and natural menopause, were asked about their consultations with a range of CAM practitioners and menopause-related symptoms experienced.

Results Acupuncturists were more likely to be consulted by women with hysterectomy experiencing night sweats (odds ratio, OR = 2.21), but were less likely to be consulted by those experiencing hot flushes (OR = 0.53). Acupuncturists were also more likely to be consulted by women with oophorectomy (OR = 3.11) and natural menopausal women (OR = 1.57) experiencing back pain. Massage therapists were more likely to be consulted by women with oophorectomy experiencing back pain (OR = 1.98), women with hysterectomy experiencing anxiety (OR = 1.52), and natural menopausal women experiencing back pain (OR = 1.54) and/or anxiety (OR = 1.29). Naturopaths/herbalists were more likely to be consulted by women with oophorectomy experiencing leaking urine (OR = 2.08). Chiropractors/osteopaths were more likely to be consulted by women across all menopausal status experiencing back pain (OR = 2.52, 2.31 and 2.25 for women with oophorectomy, hysterectomy and natural menopause, respectively).

Conclusions There are substantial levels of CAM practitioners' consultations amongst menopausal women, with a range of menopause-related symptoms associated with the use of specific CAM practitioner modalities. It is important that health-care providers are mindful of CAM practitioner use in order to ensure safe, effective and coordinated treatment and support for menopausal women in their care.

4.3 A cross-sectional analysis of the utilisation of self-prescribed complementary and alternative medicine within menopause care

4.3.1 Introduction

The results contained within this chapter have been published as follows:
Peng, W., Sibbritt, D. W., Hickman, L., & Adams, J. (2015). Association between use of self-prescribed complementary and alternative medicine and menopause-related symptoms: A cross-sectional study. *Complementary Therapies in Medicine*, *23*(5), 666-673.

Beyond the descriptions of symptomatic menopausal women's CAM provider consultations, it is imperative, within the scope of HSR, to examine the use of self-prescribed CAM amongst women experiencing menopause-related symptoms. Therefore, this section examines a number of potential associations between frequently reported menopause-related symptoms (as outlined in Section 4.2) across three types of menopausal status (hysterectomy, oophorectomy, and natural menopause) and a series of popular self-prescribed CAM (vitamins/minerals, yoga/meditation, herbal medicines, aromatherapy oils, and Chinese medicines) amongst a large population-based nationally representative sample of menopausal women. This was undertaken to address Research Question 4 of the thesis.

Information in regards to the self-prescription of CAM by symptomatic menopausal women with different menopausal status provides an understanding of the types of symptoms that may lead women to self-prescribe CAM. This information is valuable as it may prompt health practitioners to initiate a conversation with women in their care about the use of self-prescribed CAM products.

4.3.2 Association between use of self-prescribed complementary and alternative medicine and menopause-related symptoms: a cross-sectional study

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Association between use of self-prescribed complementary and alternative medicine and menopause-related symptoms: A cross-sectional study

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ABSTRACT

Objectives: To examine the association between self-prescribed complementary and alternative medicine use and menopause-related symptoms, stratified by menopausal status.
Methods: Data were obtained from a cross-sectional survey of a nationally representative sample of 10,011 menopausal women from the Australian Longitudinal Study on Women's Health, conducted in 2010. Multivariable logistic regression models were applied to identify if the use of selected self-prescribed complementary and alternative medicine was significantly associated with a range of menopause-related symptoms.
Results: Vitamins/minerals were more likely to be used by natural menopausal women experiencing anxiety (adjusted OR = 1.20) and/or stiff/painful joints (adjusted OR = 1.16). Yoga/meditation was more likely to be used by women with hysterectomy (adjusted OR = 1.76) or natural menopausal women (adjusted OR = 1.38) experiencing anxiety. Herbal medicines were more likely to be used by natural menopausal women experiencing anxiety (adjusted OR = 1.22), tiredness (adjusted OR = 1.20), and/or stiff/painful joints (adjusted OR = 1.17), and by women with oophorectomy experiencing tiredness (adjusted OR = 1.45). Aromatherapy oils were more likely to be used by natural menopausal women experiencing night sweats (adjusted OR = 1.25) and by women with hysterectomy experiencing anxiety (adjusted OR = 2.02). Chinese medicines were more likely to be used by women with oophorectomy experiencing stiff/painful joints (adjusted OR = 4.06) and/or palpitations (adjusted OR = 3.06).
Conclusions: Our study will help improve the patient-provider communication regarding complementary and alternative medicine use for menopause, and we conclude that menopausal status should be taken into account by providers for menopause care. The women's experience and motivations of such use warrant further research.

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Peng, W., Sibbritt, D. W., Hickman, L., & Adams, J. (2015). Association between use of self-prescribed complementary and alternative medicine and menopause-related symptoms: A cross-sectional study. *Complementary Therapies in Medicine*, *23*(5), 666-673.

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4.4 A longitudinal analysis of the utilisation of complementary and alternative medicine practitioners and self-prescribed complementary and alternative medicine within menopause care

4.4.1 Introduction

The results contained within this chapter have been accepted (Ahead-of-Print) as follows: Peng, W., Adams, J., Hickman, L., & Sibbritt, D. W. (2016). Longitudinal analysis of associations between women's consultations with complementary and alternative medicine practitioners/use of self-prescribed complementary and alternative medicine and menopause-related symptoms, 2007-2010.*Menopause*, *23*(1), 74-80.

Given the necessity for a comprehensive approach to HSR related to CAM (identified in Section 1.4), there is a need to explore the prevalence of menopause-related symptoms reported by each survey, together with the prevalence of CAM utilisation for each CAM modality. This longitudinal study reported considerable associations between commonly accessed CAM practitioner groups (as outlined in Section 4.2), popular types of self-prescribed CAM (as outlined in Section 4.3) and a wide range of menopause-related symptoms (the same symptoms as described in both two cross-sectional analyses) over time in a large sample of women experiencing natural menopause, hysterectomy, and oophorectomy. In doing so, it offers an answer to Research Question 5 of the thesis.

Longitudinal analysis found that a high percentage of menopausal women aged 56 to 64 years were still experiencing hot flushes. This paper adds significant insights into the role of self-prescribed CAM in the treatment of menopause-related symptoms. Both, consultations with CAM practitioners and the use of self-prescribed CAM are lower amongst women with surgical menopause than women with natural menopause, and the utilisation of all CAM practices and practitioners, except that of self-prescribed vitamins/minerals, declined with menopausal women’s age. The associations between CAM use and hot flushes are weak, while menopausal women are more likely to consult a massage therapist, a chiropractor/ osteopath, and/or an acupuncturist when they are experiencing back pain across time.

4.4.2 A longitudinal analysis of women's consultation with complementary and alternative medicine practitioners and use of self-prescribed complementary and alternative medicine for menopause-related symptoms, 2007-2010

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Longitudinal analysis of associations between women's consultations with complementary and alternative medicine practitioners/use of self-prescribed complementary and alternative medicine and menopause-related symptoms, 2007-2010

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Abstract

Objective: This study aims to determine associations between consultations with complementary and alternative medicine (CAM) practitioners/use of self-prescribed CAM and menopause-related symptoms.

Methods: Data were obtained from the Australian Longitudinal Study on Women's Health. Generalized estimating equations were used to conduct longitudinal data analyses, which were restricted to women born in 1946-1951 who were surveyed in 2007 (survey 5; n = 10,638) and 2010 (survey 6; n = 10,011).

Results: Women with menopause-related symptoms were more likely to use self-prescribed CAM but were not more likely to consult a CAM practitioner. Overall, CAM use was lower among women who had undergone hysterectomy or women who had undergone oophorectomy, compared with naturally postmenopausal women, and decreased with increasing age of postmenopausal women. Weak associations between CAM use and hot flashes were observed. Women experiencing hot flashes were more likely to consult a massage therapist (odds ratio, 1.09; 95% CI, 1.00-1.20) and/or use self-prescribed herbal medicines (odds ratio, 1.13; 95% CI, 1.03-1.23) than women not experiencing hot flashes.

Conclusions: Consultations with CAM practitioners and use of self-prescribed CAM among naturally or surgically postmenopausal women are associated with menopause-related symptoms. Our study findings should prompt healthcare providers, in particular family medicine practitioners, to be cognizant of clinical evidence for CAM typically used for the management of common menopause-related symptoms in their aim to provide safe, effective, and coordinated care for women.

Key Words: Complementary and alternative medicine – Complementary therapies – Menopause – Hysterectomy – Oophorectomy – Longitudinal analyses.

CHAPTER 5 DISCUSSION

This body of work encompasses important insights for menopause care in Australia. The publications that form the Results Chapters of this thesis have highlighted numerous discussion points. The following discussion outlines the wider implications of this body of work. In this chapter the impact and significance of the findings with regards to CAM provider consultations and use of self-prescribed CAM will be explored. This chapter will also discuss several limitations of the research presented in this thesis, and suggest future research directions for CAM use by menopausal women. Due to the HSR approach of this study, women suffering from menopause-related symptoms and the range of health professionals (including those providing conventional care services, CAM practice, or integrating both approaches) as well as health policy makers will benefit from the findings with regard to symptomatic menopausal women's use of CAM as shown in this thesis.

5.1 Primary findings from the research

National guidelines have recommended that women who experience menopause-related symptoms for more than 10 years or who are over 60 years of age may not use HRT due to possible adverse effects (De Villiers et al., 2013). Clearly, this clinical practice advice leaves women who meet these criteria without the option of HRT for the management of their menopause-related symptoms. In addition, this recommendation may give rise to conventional providers' uncertainty in relation to treatment options for this group of menopausal women, which may in turn drive older menopausal women to use CAM (Gentry-Maharaj et al., 2015). This is an important health issue as a proportion of menopausal women aged over 60 years are still seeking help for their hot flushes/night sweats (see Chapter 4). As such, this study directly contributes to our understanding of this important issue through utilising a large nationally representative sample of Australian women approaching 60 years or over. The key findings of the study presented in this thesis are: 1) women's use of specific and different CAM practitioners and/or CAM therapies/products is associated with specific menopause-related symptoms; 2) the majority of symptomatic menopausal women use self-prescribed CAM, possibly without medical guidance; and 3) the use of CAM varies amongst women based upon whether the women have undergone a hysterectomy, an

oophorectomy, or have attained a natural menopause, for the management of menopause-related symptoms.

5.1.1 Women's use of different complementary and alternative medicine practitioners and/or complementary and alternative medicine therapies/products is associated with specific menopause-related symptoms

As described in the Introduction Chapter (see section 1.3.1), CAM cannot be viewed as a homogeneous group because of the considerably varied effects and features of each different CAM modality. Menopausal women (shown in this thesis) visited different groups of CAM practitioners and/or used different types of self-prescribed CAM. The possible reasons for menopausal women's varied CAM choices as identified in the study include the desired outcome as expected by these women when using specific CAM modalities for menopause-related symptoms, women's self-perceived effectiveness of CAM practices for menopause-related symptom management, and/or conventional healthcare providers' perceptions of and attitudes to different CAM modalities for menopausal women.

5.1.1.1 Menopause care may be associated with the expectation of symptom relief by specific complementary and alternative medicine treatments

There are a number of significant associations between individual CAM modalities and certain menopause-related symptoms as shown in the Results Chapter. Due to an emerging body of evidence, women may have an expectation that some CAM treatments may be effective in the relief of menopause-related symptoms. These expectations may be contributing to the significant associations found in this research. One of the interesting findings to come out of this research is that menopausal women choose a wide variety of CAM. Findings reported in this thesis show that menopausal women who experience back pain are more likely to consult a massage therapist over time. Historically, massage therapy may be the earliest treatment for pain problems (Imamura et al., 2008). The treatment outcome of massage therapy for back pain is supported by Cochrane/systematic reviews, presenting the emerging evidence with regard to the short-term effectiveness of massage therapy for back pain and suggesting that massage therapy may be more effective for back pain compared to relaxation and physical therapy (Furlan et al., 2009; Kumar et al., 2013; Furlan et al., 2015). The

notion of the effectiveness of massage therapy for the management of back pain may be established or popular amongst general population sub-groups such as menopausal women. However, the extent to which clinical evidence and support for massage therapy (or any other CAM) is known or influential amongst menopausal women if at all remains beyond the scope of the study presented here. This is a topic that deserves further empirical investigation.

Chiropractors and osteopaths specialize in treating musculoskeletal pain and the vast majority of Australians who seek chiropractic and/or osteopathy care do so to treat back pain and related conditions (Xue et al., 2008). As expected, the significant association between menopause-related back pain and consultation with a chiropractor/osteopath has been shown in this thesis for women aged 59-64 years, both independently and when compared to three years earlier. Meanwhile, the study presented here also demonstrates that menopausal women experiencing back pain are more likely to use self-prescribed herbal medicines when compared to three years prior. The varied choices of CAM use at different time for menopause-related back pain may be partly explained by the results of a large US national survey amongst the general population who used CAM for back pain, showing adults including women consider that they have greater benefits from chiropractic treatment than that received from herbal medicines (Kanodia et al., 2010). Nevertheless, the extent to which the use of a chiropractor/osteopath by women in the present study is the direct or indirect result of such published clinical findings remains to be investigated. While it appears unlikely that these women have personally engaged with such research output, it is possible that health professionals and others supporting their care may have made recommendations or suggestions based upon this evidence, which has influenced the women's decision to consult a chiropractor/osteopath.

Findings of this research indicate that menopausal women experiencing hot flushes are more likely to self-prescribe herbal medicine over time (see section 4.4). This temporal trend may in part reflect a need for women with hot flushes to seek alternative treatments as initial or more conventional treatments prove unsuitable over time (especially for menopausal women older than 60 years) (De Villiers et al., 2013), and this line of enquiry should be investigated in future research. The increasing use of

herbal medicines for hot flushes outlined in this thesis is also, in part, in line with information provided by the Australasian Menopause Society which reports that black cohosh has some evidence of effectiveness in reducing hot flushes in some clinical trials (Australasian Menopause Society, 2014). Black cohosh was approved by TGA in Australia as a listed medicine in 2009 (Therapeutic Goods Administration, 2015). However, it is not clear from this research if the significant association between the use of herbal medicines and hot flushes is purely based on the popular use of black cohosh or due to the use of any other herbal medicine. More studies are needed to identify and examine the different commonly used individual herbal medicines amongst older menopausal women experiencing hot flushes.

5.1.1.2 Women's self-perceived effectiveness of complementary and alternative medicine use for menopause-related symptom management

As discussed in the Introduction Chapter, many menopausal women consider their personal responsibility and perceive themselves as experts in their own health, including the decision to use CAM, especially after extensive periods of engaging with and/or utilising CAM practices (Lindenmeyer et al., 2011). The longitudinal data analysis results presented in this thesis show that, over three years, back pain is the only symptom significantly associated with consultation with a chiropractor/osteopath (see section 5.1.1.1), as well as the consultation with an acupuncturist amongst menopausal women. This finding may be in relation to menopausal women's self-perceived effectiveness of practitioner-administered chiropractic, osteopathy, and acupuncture therapies, as past research suggests Australian menopausal women actively seek CAM information through a number of sources, and the decision on CAM use even in some cases is exclusively guided by themselves (Berger et al., 2001; Gollschewski et al., 2008). The evidence regarding some menopausal women's self-perceived effectiveness of acupuncture therapy in the present study may be related to the fact that WHO has identified acupuncture as a CAM practice with a high level of effectiveness for back pain since 2002 (WHO, 2002). In addition, back pain is notoriously difficult to treat and the risk of back pain increased with age (Andersson, 1999). Individuals with back pain often seek various treatment options at the point when pain is unbearable (Broom et al., 2012a; Broom et al., 2012b). Acupuncture always plays an important role, as an adjunct to a multidisciplinary treatment, in the management of back pain in the clinical practice

(Lewis & Abdi, 2010). An observational study undertaken in the US showed that more than 60% of the general population (women comprising the majority of participants) with back pain received information from other people on the treatment outcome regarding acupuncture for back pain and more than 20% of these users experienced successful acupuncture treatment for their back pain (Sherman et al., 2010). As such, menopausal women may perceive acupuncture as providing support to them regarding back pain management and continue use acupuncture for back pain across time. However, further research is needed to explore these phenomena and to clarify why some menopausal women choose specific CAM modalities for a certain symptom.

Another typical example presented in this thesis is that anxiety is the only menopause-related symptom positively associated with the use of self-prescribed yoga/meditation over three-year period. Past observational research has identified anxiety and other mental disorders as being strongly associated with hot flushes (Joffe et al., 2002; Ellen et al., 2005) and the most common motivation for using yoga/meditation (Joshi et al., 2011; Cramer et al., 2012). However, there has been no randomized controlled trial data to support the use of yoga/meditation for menopause-related anxiety (Newton et al., 2014; Jeter et al., 2015). As such, some menopausal women may believe the alleviation of anxiety they experience outweighs the lack of clinical evidence, and use yoga and/or meditation in an attempt to relieve their anxiety (Javnbakht et al., 2009). Nevertheless, the underpinning reason behind the association between self-prescribed yoga/meditation use and menopause-related anxiety is not clear. Unfortunately, the present study does not accommodate examination of these interpretations of the women's treatment seeking behaviour and further research on this topic is certainly warranted.

5.1.1.3 Referral from conventional providers may influence women's choice of complementary and alternative medicine practitioners for menopause-related symptoms

The findings presented in this thesis demonstrate that a large proportion of Australian menopausal women use CAM as well as access care from a GP/gynaecologist (see section 4.1). Previous studies have shown that most menopausal women trust the advice of GPs or gynaecologists more than CAM practitioners with regards to CAM use (see section 2.1). Therefore, conventional medical providers may influence women's decisions about CAM use for menopause-related symptoms (Grant et al., 2007). It is

possible that those menopausal women who consult with a GP/gynaecologist may in some cases be formally or informally referred to a CAM practitioner for further treatment (Furlow et al., 2008).

The findings presented in this thesis also show strong positive associations between menopause-related back pain and consultation with a massage therapist, a chiropractor/osteopath, and/or an acupuncturist across time, and a weak positive association between menopause-related back pain and consultation with a naturopath/herbalist as well as weak negative associations between menopause-related headaches and consultation with a naturopath/herbalist (see section 4.4). There is no study available undertaken in Australian to reveal GPs/gynaecologists' perceptions of the roles massage therapists, naturopath/herbalists, chiropractors/osteopaths, and acupuncturists may play in menopause care. However, research findings on GPs' referral practices with regard to massage therapists, naturopath/herbalists, chiropractors/osteopaths, and acupuncturists amongst general population (beyond a menopause care focus) do provide some implication for those in menopause care, with the fact that GPs are generally more supportive of CAM practitioners practising body work therapies such as massage, chiropractic/osteopathy, and acupuncture (Xue et al., 2008; Wardle et al., 2013b; Wardle et al., 2013d; Wardle et al., 2013e) than of naturopath/herbalist (Wardle et al., 2014b). The main possible reason concerning the different levels of support may be related to the safety of different CAM modalities, showing that conventional healthcare providers consider manual therapies to be a safer option than herbal medicines and consider manual therapies to have little chance of interacting with conventional medications (Xue et al., 2008), while these providers are uncertain about the potential interaction between herbal medicines and conventional medications (Sibbritt, 2014; Shifren et al., 2014). In addition, the professional training provided for chiropractors and osteopaths in the Australian university sector as well as national registration of chiropractors and acupuncturists may positively influence conventional practitioners' perceptions of these two groups of CAM providers, despite recent criticisms of chiropractic by some with conventional medicine (Sweet, 2011). Many GPs/specialist doctors would appear to rate chiropractic and osteopathy as evidence-based medicine, and suggest patients to utilise them for the management of musculoskeletal conditions (Xue et al., 2008; Münstedt et al., 2014).

5.1.2 The prevalence of self-prescribed complementary and alternative medicine use is high amongst symptomatic menopausal women

This thesis has highlighted an important public health issue that the majority (75%) of menopausal women aged 59-64 years use at least one self-prescribed CAM, especially vitamins/minerals and/or herbal medicines (Chapter 4). This high prevalence of self-prescribed CAM raises a number of important health service concerns around non-professional information sources on CAM, in particular the safety and possible risks of CAM products use. The details are outlined below.

5.1.2.1 Information from non-professional sources may attribute to the high use of complementary and alternative medicine self-prescription

Many menopausal women, as presented in this thesis, self-prescribe CAM therapies/products, at rates much higher than they consult with healthcare practitioners, which suggests that healthcare practitioner may be not necessarily be central to accessing treatment. The high prevalence of self-prescribed CAM by menopausal women highlights the importance of the role that a number of information sources and influential others (beyond healthcare practitioners) may play in a woman's decision to use CAM. A good example outlined in this thesis relates to the significant association between the use of self-prescribed herbal medicine black cohosh and hot flushes. Whilst the likely influence from the perceived effectiveness of black cohosh for the management of hot flushes was outlined in the section 5.1.1.1, various information sources on CAM may be taken into account regarding the reasons of the perceived effectiveness. Some menopausal women experiencing hot flushes could obtain the information on the use of black cohosh from family members/friends/menopausal peers, or from mainstream media (including the internet, newspapers and magazines) (Armitage et al., 2007). The critical review included in the thesis demonstrates that the recommendations from a family member/friend/menopause peer who has used a CAM product (in this case: black cohosh) for the management of hot flushes, or the media information which specify the effect of black cohosh for hot flushes are considered "reliable" information from the perspective of menopausal women (see section 2.1). In addition, the consumption of self-prescribed CAM via direct purchase remains a largely uncharted territory more generally (Adams et al., 2008) and this is certainly the case

with regards to menopausal women's utilisation. Pharmacy assistants and retail staff (such as those in supermarkets, chemists, and health food stores) may influence menopausal women who experience hot flushes at point of purchase of black cohosh. They might be aware of the effectiveness of black cohosh and might be notifying customers who seek help for the management of hot flushes (Derkatch, 2012). Nevertheless, it is not possible to know the exact reason of the use of self-prescribed CAM from the results presented here, but more research is needed to examine women's use of self-prescribed CAM in detail, to explore the intricacies of their decision-making and the information sources upon which women are choosing CAM products for menopause-related symptoms.

Menopausal women (like all individuals) who initiate use of self-prescribed CAM based on or with exclusive input from various non-professional information sources, may delay diagnosis and/or effective conventional treatment (Wardle & Adams, 2014). In particular, pharmacy assistants and retail staff tend to be considered by the general population as a group of qualified people (Wardle & Adams, 2014). It is important to note that only a very small percentage of retail staff are qualified CAM practitioners by way of formal training (Raynor et al., 2011), and despite working in the pharmacy setting and being the usual source of advice in this setting for women regarding CAM use, many pharmacy assistants do not possess adequate CAM knowledge (Kwan et al., 2006). As such, they are not qualified to provide appropriate recommendations or interpret CAM use for customers (Wardle & Adams, 2014).

5.1.2.2 High out-of-pocket expenses for complementary and alternative medicine consultations may relate to the high use of complementary and alternative medicine self-prescription

Australian people generally have to pay for CAM products as well as the vast majority of out-of-pocket expenses for CAM consultation services, only acupuncture treatments provided by GPs are covered by Medicare (Xue et al., 2008). Accordingly, it may be that many women counterbalance the cost of their overall CAM consumption (primarily self-prescribed CAM use) by ceasing consultations with CAM providers (Gollschewski et al., 2008; NHMRC, 2014).

The relatively low prevalence of visits to a naturopath/herbalist presented in this thesis may be such an example. As described in the section 1.5.3.2, naturopaths and herbalists generally prescribe vitamins/minerals and herbal medicines to individuals. However, women with menopause-related symptom are more likely to use self-prescribed vitamins/minerals and/or herbal medicines over time but are not more likely to consult a naturopath/herbalist (see section 4.4). Symptomatic menopausal women generally have higher medical and CAM costs with the inclusion of a consultation fee (Kleinman et al., 2013). Given these circumstances it is possible that menopausal women seek initial guidance from naturopaths/herbalists regarding suitable products and remedies for their menopausal symptoms but then later in time continuing such product use without continuing CAM professional guidance. The extent to which such CAM product use may be, or may continue to be, safe or effective over time without the guidance and direction of a naturopath/herbalist is questionable and such self-directed CAM use raises important questions around the suitability of the product, dosage and possible polypharmacy over time (Wardle & Adams, 2014).

5.1.2.3 Safe use may contribute to the high complementary and alternative medicine self-prescription

Menopausal women with a range of symptoms such as anxiety, stiff or painful joints, and headaches are more likely to use self-prescribed vitamins/minerals, herbal medicines, and aromatherapy oils (as shown in this thesis) (see section 4.4). The wide use of self-prescribed CAM products may reflect menopausal women's belief that the CAM products are natural and safe, and so they can use them without the involvement of healthcare practitioners (Hill-Sakurai et al., 2008).

The critical reviews presented in Chapter 2 indicate that, especially in light of the influence of HRT side effects, many women desire a safe and natural treatment for the management of menopause-related symptoms. The vast majority of CAM products are not synthetic and this may contribute to the belief amongst menopausal women that CAM products are natural and safe (Singh et al., 2007; Lane, 2008; Harrigan, 2011). More importantly, a large number of CAM products are easily accessible for customers at retail stores or online shops (van der Slujis et al., 2013) and this fact alone may contribute to menopausal women perceiving such products to be safe.

5.1.3 Menopausal status influences women's complementary and alternative medicine use for menopause-related symptoms

The results from the longitudinal analysis of this study indicate that women with hysterectomy and women with oophorectomy are both less likely to use CAM (including CAM practitioner consultation and self-prescribed CAM) in comparison to women with natural menopause over time (see section 4.4). Women generally begin HRT immediately after hysterectomy or oophorectomy (Banks & Canfell, 2009; Haskell et al., 2009; Moen et al., 2010). Typically, menopausal women who undergo hysterectomy/oophorectomy feel relief from their menopause-related symptoms (especially hot flushes and night sweats), after taking HRT (Haskell et al., 2009; Burrell et al., 2010). RCTs as well as observational data have provided evidence that estrogen alone therapy may also decrease breast cancer in menopausal women with hysterectomy and the number of women undergone oophorectomy with fractures or colorectal cancer was lower in women taking estrogen plus progestogen therapy (Cauley et al., 2003; Anderson et al., 2012; Villiers et al., 2013). So it is not surprising that results presented in this thesis show that women with hysterectomy and women with oophorectomy are more likely to seek help from GPs and specialist doctors than women with natural menopause (see section 4.1). Thus the advice from conventional medical providers may largely affect menopausal women's use of HRT after surgery. The absence of understanding of CAM treatments philosophy, concerns about any potential interactions between CAM products and medicines, and uncertainty about providing CAM information to women may lead conventional medical practitioners to not discuss CAM use with menopausal women (Moen et al., 2010). As such, it is not too surprising that both women with hysterectomy and women with oophorectomy, who are continuous HRT users, are less likely to use CAM for the management of menopause-related symptoms than women with natural menopause.

Alternatively, some women with surgical menopause commence HRT first and then discontinue HRT due to previous experience of side effects of HRT (Castelo-Branco et al., 2007; Challberg et al., 2011). The discontinuation of HRT amongst menopausal women who underwent hysterectomy or oophorectomy may initiate the recurrence of some menopause-related symptoms (Haskell et al., 2009). Not surprisingly some of

these women decide to use CAM such as vitamins/minerals, herbal medicines, and yoga to treat menopause-related symptoms (Kupferer et al., 2009; Australasian Menopause Society, 2013). However, a previous study has shown that while a proportion of women with surgical menopause who have discontinued HRT choose some types of CAM practices to relieve symptoms, many of these women are likely to re-commence taking HRT, probably with a view to experiencing fast relief of symptoms (Haskell et al., 2009).

Whilst the research presented in this thesis shows that although the use of CAM amongst women with surgical menopause is lower than women with natural menopause, a great proportion of women who underwent hysterectomy and women who underwent oophorectomy appear to still be visiting CAM providers and/or using self-prescribed CAM. Menopausal women's history of gynaecological surgeries plays an important role in their different choices of consultations with CAM practitioners as well as their use of self-prescribed CAM for specific menopause-related symptoms. Further, the use of CAM amongst women who underwent a hysterectomy or oophorectomy is also different from that of women with natural menopause (see sections 4.2 and 4.3). For example, women with hysterectomy who experienced night sweats are two times more likely to consult an acupuncturist than those without night sweats, whereas there is no such association amongst women with oophorectomy and women with natural menopause. Similarly, women with oophorectomy experiencing leaking urine are more likely to consult with a naturopath/herbalist, but there is no such association amongst women with hysterectomy and women with natural menopause. While menopause-related depression is significantly associated with the use of self-prescribed CAM amongst women with hysterectomy and women with oophorectomy, but this association is evident amongst women with natural menopause. Nevertheless, we do not know the detailed reasons regarding the choices of CAM for corresponding menopause-related symptoms amongst women with hysterectomy, oophorectomy, and natural menopause. It is important that future studies of CAM use amongst menopausal women pay sufficient attention to the different menopausal status of participant and provide comparative analyses across the different statuses where possible.

Overall, this thesis provides comprehensive findings with regard to the varied consultations with different CAM providers and use of self-prescribed CAM for the management of menopause-related symptoms, stratified by menopausal status; drawn upon a large nationally-representative sample of menopausal women. However, further research is necessary to provide detailed, in-depth examination of the perceptions of menopausal women and practice behaviours of GPs and gynaecologists regarding different CAM in menopause care and the extent and ways in which such conventional medical providers may be influencing the treatment choices and decision-making of women around CAM for menopausal symptoms.

5.2 Significance of the research findings

CAM is an important treatment option utilised by menopausal women, generating much interest and concern amongst conventional medical practitioners and health policy makers. The present research aimed to address a broad range of issues concerning visits to CAM practitioners and the use of self-prescribed CAM products for a range of common menopause-related symptoms. The use of CAM by menopausal women with differing menopausal status (i.e. surgical menopause, natural menopause) has not been previously investigated.

The first primary finding presented above refers to the varied choices of CAM provider and self-prescribed CAM amongst menopausal women. This study provides a number of close associations between CAM modalities and common menopause-related symptoms, stratified by menopausal status. Women commonly visit their GP or specialist for help with menopausal symptoms and as such, these results alert conventional medical practitioners to the high use of CAM amongst this group. Menopausal women consult varied groups of CAM practitioners for symptom management, including groups of practitioners who are not included in the national registration system (i.e. massage therapists and naturopaths/herbalists). There is a need for health policy makers to be aware of the common self-regulated groups of CAM practitioners in menopause care.

The second primary finding contained in this thesis is the high prevalence of self-prescribed CAM use amongst menopausal women. The risks, in relation to the use of

CAM without the involvement of healthcare providers' guidance, are of increasing concern. Highlighting this topic may reinforce the need for conventional medical providers, CAM practitioners, and health policy makers to be aware of menopausal women's positive attitude towards the use of CAM for symptom relief, despite a lack of robust clinical evidence. Non-professional information sources (e.g. family/friends/menopause peers, media and relevant retail staff) which are utilised by women when making decisions about self-prescribed CAM use raise an imperative safety concern. The common safety concerns relate to issues around efficacy and safety due to the lack of clinical trial data, however many women may also not be aware of the potential for herb-drug interactions. As such, various non-professional information sources are informing the self-prescription of CAM, increasing the possibility that women are at risk of not receiving an adequate diagnosis and treatment. In addition, this research finds that the majority of menopausal women who self-prescribe CAM also seek help from conventional medical practitioners, which suggests an opportunity for GPs and specialist doctors to take a more active role in guiding menopausal women's use of CAM products and to pay attention to potential dangers of CAM self-prescription alongside prescription medications including HRT.

The third primary finding shown in this thesis is the importance of distinguishing the use of CAM providers and self-prescribed CAM across different menopausal status - women with hysterectomy, women with oophorectomy, and women with natural menopause - which has not been considered by previous studies in menopause care. As described in Chapter 1, it can be problematic for both research and clinical treatment to either categorise all menopausal women as a single group ("menopausal women") and/or categorise women with hysterectomy and women with oophorectomy into a single group as "women with surgical menopause". The findings presented in this thesis not only examines the use of different specific CAM providers and therapies/products for symptom management amongst women at different menopausal status via cross-sectional analysis, but also identifies the changes in CAM use over time across women with hysterectomy, women with oophorectomy, and natural menopause via longitudinal analysis.

The work presented in this thesis has already attracted significance attention from the leading professional menopause societies representing medical and health professionals in menopause care (see Appendix 4). The North American menopause society and the Australasian Menopause Society have both distributed media releases focusing upon the findings of the study presented in this thesis. As the medical director of The North American menopause society commented on the findings outlined in the published manuscripts included in this thesis: "*There is still much to be learned in the CAM arena and women need to understand that just because something appears natural does not necessarily mean it is without risk, especially for certain populations*. *In the meantime, this study does a good job of alerting clinicians to the growing interest in CAM alternatives and of the critical role of health providers in helping educate patients on the potential risks and benefits of all options*". Overall, the HSR approach employed in this thesis helps contribute to the critical investigation of CAM practitioner and CAM therapies/products use amongst menopausal women. The findings of the study also add to the current knowledge about the trends in CAM use for the management of menopause-related symptoms and demonstrate considerable implications of CAM use in menopause care, especially within an Australian context.

5.3 Implications from the research

The research findings presented here have a number of implications for a range of stakeholder regarding CAM use in menopause care - menopausal women, healthcare providers, and health policy makers - regarding CAM use in contemporary menopause care. This section now focuses in turn upon exploring the implications of the research findings presented for each of these stakeholder groups.

5.3.1 Implications for women with menopause-related symptoms

Women's life expectancy is increasing in contemporary high income societies (including Australia) (AIHW, 2015), and women may spend a third of their lives in the menopausal stage (Rashidi & Shanley, 2009). Menopause is a self-limiting life stage for women and many symptoms disappear after a few years. There is research that suggests there are non-biological factors involve in women's experience of, reporting and treatment seeking for menopause-related symptoms (Obermeyer, 2000; Crawford, 2007).

However, menopausal women are experiencing menopause-related symptoms with serious implications for their health and quality of life; and facing the challenges of choosing CAM use for symptom management, especially amongst women aged 60 or over who may be advised by health professionals to avoid/minimise the use of HRT due to the heightened risk of potential adverse effects (Dennerstein et al., 2000; De Villiers et al., 2013). In such cases, considering the use of CAM may be a relevant option regardless of their specific menopausal status. Nevertheless, it is important that menopausal women communicate effectively with their healthcare providers (whether conventional or complementary) regarding their current and ongoing CAM use and any possible additional CAM use they may be contemplating (NHMRC, 2014). Indeed, findings produced by the research presented in this thesis tend to reinforce the need for menopausal women to be cognisant of and give substantial consideration to the relative safety and risks of CAM products, to seek out reliable information sources with regards to the suitability and effectiveness of different CAM practices for their symptoms, and to help promote open communication with all healthcare providers contributing to the management of their menopause-related symptoms.

One primary finding arising from this study pertains to the high prevalence of use of CAM self-prescription in menopause care. Although some Australian women who choose to use CAM for menopause-related symptoms because they perceive this to be a 'more natural approach to a natural life stage', this finding has significant health services and public health implications around possible direct and indirect risks to menopausal women. The direct risk refers to the risk from the broad range of CAM products self-prescribed by menopausal women, such as vitamins, herbal medicines, and Chinese medicines. Although this study cannot provide the specific CAM product menopausal women used, black cohosh, for example, the most commonly used herbal medicine which is associated with the treatment of hot flushes (see section 5.1.1.1) may be such a case to demonstrate the direct risk of CAM products use. A recent Cochrane review suggests whilst the use of black cohosh is relatively safe compared to the use of HRT for hot flushes (comparison of rate of adverse events), women using black cohosh may still suffer breast pain/enlargement, infection, vaginal bleeding/spotting, musculoskeletal complaints and gastrointestinal upset (Leach & Moore, 2012). Indirect risks include risk associated with delayed or incorrect diagnosis and/or treatment. As

menopausal women (as shown in this thesis) are more likely to use self-prescribed CAM than consulting with a CAM practitioner over time, healthcare providers are probably not guiding the use of CAM in a substantial number of cases. Advice from CAM and/or conventional healthcare providers would help ensure coordinated CAM use (at least in terms of establishing the input of all relevant providers) and potentially assist menopausal women in making appropriate decisions on CAM use (Koithan, 2010). It is necessary for menopausal women to realize the importance of CAM consultation, to disclose their CAM use for symptom management, and to pay attention to the communication with their healthcare providers regarding CAM use.

As shown in the Results Chapter of this thesis, not only women with natural menopause, but also women with hysterectomy and women with oophorectomy use self-prescribed CAM for a wide range of symptoms. More importantly, based on our findings, the use of both CAM practitioners and self-prescribed CAM products are different across women at different menopausal status (i.e. hysterectomy, oophorectomy, and natural menopause) for specific menopause-related symptoms. Menopausal women are likely to share and exchange information on CAM use with other menopausal women (see section 1.3.2). However, it may be potentially risky, regarding effectiveness and safety, when a woman at one menopausal status (e.g, oophorectomy) shares her experience in choosing CAM practices for a specific symptom with another menopausal woman who is under other menopausal status (e.g. hysterectomy and natural menopause). Thus, it is imperative for menopausal women to evaluate the information on CAM use from non-professional sources, and those who undergo hysterectomy or oophorectomy to consult a healthcare provider for the safe and effective use of CAM rather than self-prescribing CAM products. In particular, for women with surgical menopause who intend to manage menopause-related symptoms through concurrent use of both CAM and HRT, increased communication with healthcare providers is one fruitful strategy with which to avoid possible CAM-drug interactions (Oates, 2010; Cardini et al., 2010).

5.3.2 Implications for menopause care providers

The body of work presented in this thesis has clearly demonstrated the high use of CAM amongst menopausal women and a range of menopause-related symptoms that predict

use of specific CAM providers and/or CAM therapies/products, stratified by menopausal status. Such findings can assist both conventional medical practitioners (GPs, gynaecologists and endocrinologists) as well as CAM practitioners (massage therapists, naturopaths, herbalists, chiropractors, osteopaths, and acupuncturists) to understand the full picture of CAM use in menopause care in Australia. For example, experiencing menopause-related back pain is positively associated with consultations with chiropractors/osteopaths and/or acupuncturists amongst women with oophorectomy and women with natural menopause when women are 59-64 years and over time. Moreover, hot flushes are negatively associated with the use of self-prescribed aromatherapy oils amongst women with hysterectomy when women are 59-64 years, but positively associated with the use of self-prescribed herbal medicines over time. As such, the findings shown in this thesis shed some light on the predictors of specific CAM modality use amongst menopausal women, which can help providers in menopause care identify both likely CAM users and the likely CAM being used amongst their clinical practice population.

The high prevalence of concurrent use of self-prescribed CAM and consultation with a GP or specialist doctor shown in this thesis (see section 4.1) might partly elicit the importance of conventional providers' advice for older menopausal women who are CAM users. Some conventional medical practitioners are doubtful about the evidence of the use of CAM therapies/products and reluctant to learn CAM knowledge, as there is scarce rigorous or high quality published data to help them understand the efficacy of CAM modalities (Rayner et al., 2011; Wardle & Adams, 2014). These conventional medical practitioners need to be aware that their negative attitude to CAM may not influence menopausal women's self-prescribed CAM use but lead menopausal women to not disclose their CAM use to them and thus these women may place themselves in danger regarding the potential drug-herb interactions (Gollschewski et al., 2008). Alternatively, some GPs and specialist doctors hold positive opinions of CAM use, and often refer patients to CAM practitioners, although they do not have sufficient information about the use of CAM modalities (Brien et al., 2008). To guide optimal menopause care to individuals, conventional medical practitioners require sufficient CAM information in menopause care. Attending CAM workshops or training sessions, cooperating with CAM practitioners, and discussing CAM with menopausal women in

their care during each visit are possible options for conventional medical providers to learn and understand CAM information (Schiff et al., 2011).

High users of self-prescribed CAM amongst women who have had a hysterectomy and/or oophorectomy should receive more attention from both conventional and CAM healthcare providers as these women are likely to take HRT prescribed from GPs or specialist doctors as well as use self-prescribed CAM products, facing the relative high possibilities of suffering herb-drug interactions, which will have serious consequence on their future health (Dog et al., 2010). Conventional medical practitioners need to initiate conversations with menopausal women about the utilisation of CAM products during routine medical visits, advise the women to be cautious about using polypharmacy (i.e. two types of herbal medicines or one type of herbal medicines with a conventional medication), and refer the individual to a qualified pharmacy assistants or a CAM practitioner for the prevention of safety problems when necessary (van der Sluijs et al., 2007). Meanwhile, both conventional and CAM providers should take the responsibility of improving patient-practitioner communication in menopause care; the efficient and satisfactory communication may help healthcare providers avoid potential drug-herb interactions among their patients and provide safe treatment option in menopause care.

5.3.3 Implications for policy makers

This is the first study that has investigated the use of CAM providers and provision amongst menopausal women approaching 60 or over, stratified by the status of hysterectomy, oophorectomy, and natural menopause. This research demonstrates the high use of CAM amongst menopausal women and expands the examination of CAM use in menopause care in the context of Australian health system. The findings from this research have implications for and should be considered within future health policy development around CAM use and menopause care.

Massage therapists and naturopaths are the two largest CAM professions in Australia, based on practitioner numbers. However, these disciplines do not register with the AHPRA (WHO & AIHW, 2012). In this study, a large proportion of symptomatic menopausal women are visiting massage therapists and/or naturopaths/herbalists. As such, the absence of these CAM practitioners who commonly provide support to

menopausal women from the AHPRA registration may contribute to the unsafe menopause care for women. In the context of the significant associations between the consultations with a massage therapist/naturopath/herbalist and specific menopause-related symptoms, policy makers should consider the need for statutory regulation of the groups of CAM practitioners commonly used by menopausal women.

In addition to the necessity of statutory regulation of frequently visited CAM practitioner groups in menopause care, one possibility regarding the provision of better menopause care is to promote the communication between healthcare providers and menopausal women and the collaboration between conventional practitioners and CAM practitioners in menopause care. The concurrent use of CAM and conventional providers is prevalent amongst menopausal women (see section 4.1). Researchers and healthcare providers have paid increasing attention to the potential herb-drug interaction between conventional medicine and CAM products in menopause care (Willis & Rayner, 2013). If healthcare providers of the same menopausal women are not fully informed of all the treatments, women may be placing themselves a risk in unsafe health services setting (Byles et al., 2008). Nonetheless, without satisfactory communication between patients and practitioners, menopausal women may be unwilling to disclose their CAM use to their conventional medical provider, and may further be at risk of and encounter safety issue (Byles et al., 2008). Therefore, there appears to be a need for guidelines to encourage and facilitate providers to ask menopausal women about their use of CAM providers and therapies/products and make informed decisions about their menopause care.

Another essential area requiring the attention of health policy makers is the need for the prevention of the risks with regard to CAM self-prescription. The high prevalence of self-prescribed CAM use amongst menopausal women (shown in this thesis) raises challenges pertaining to the potential risks of such product use in menopause care, especially for women with surgical menopause who may use HRT. The regulation of CAM products is overseen by the TGA in Australia. However, the regulated CAM products are not evaluated by the TGA regarding their safety when using with other medications/herbs concurrently. Based on these gaps in regulation, it is recommended that health policy makers suggest menopausal women to consult qualified practitioners

on the CAM products they intend to take, help healthcare providers to understand and thus inform women to ensure that the CAM products are efficacious without severe side effects and interactions. It is also recommended that health policy makers may advise both menopausal women and healthcare providers to promptly report any side effects they suspect are caused by a CAM product (Australian Medical Association, 2012).

5.4 Limitations of the research

This thesis outlines the results of the largest nationally representative longitudinal study on menopausal women's health in Australia, investigating the use of both CAM practitioners and self-prescribed CAM in menopausal women. Four limitations of this study should be acknowledged within the field of HSR and the study design.

5.4.1 Definition of complementary and alternative medicine

The research presented in this thesis examines the prevalence of CAM use in menopause and associations between a wide range of CAM modalities use and menopause-related symptoms, which may have been underestimated due to the inclusion of the restricted list of four groups of CAM practitioners and five types of self-prescribed CAM in the analyses. In addition, the questionnaire items used for the study did not enquire about the use of individual CAM products such as specific vitamins, herbal medicines, and aromatherapy oils, which were highly popular amongst menopausal women from this study. Owing to safety concerns related to some of these products, future research should explore which vitamin/mineral, herbal medicine, and/or other CAM products women have used or were using. There is also a need to generalize the operational definition for CAM in menopause area so that it allows surveys on CAM prevalence and use to be comparable across time and across countries.

5.4.2 Selection bias

Age restrictions of menopausal women within selected surveys of the mid-age cohort may have resulted in selection bias. The focus of this research is women aged 56-61 years and the same cohort of women three years later. Primarily, the average age of menopause is 52 years and the age range of women in the study exclude women who are near final menstrual period or perimenopause, when the highest rates of menopause-related symptoms occur. As such, the findings of this study may not be representative of

all menopausal women. Any CAM use associated with premenopause and perimenopause may not be adequately described in this study. However, results identified in this study provide important information regarding the use of self-prescribed CAM for a noteworthy group of menopausal women who may not suitable to use HRT for symptom management, help healthcare providers to provide effective and safe recommendations on CAM therapies/products use to menopausal women, and identify the current gaps of this topic for policy makers.

5.4.3 Recall bias

The study data collected regarding the women's consultations with CAM practitioners, use of self-prescribed CAM and experiences of menopause-related symptoms were all self-reported and this may have influenced the study results due to potential recall bias. Previous studies have suggested that self-reported symptoms are valid and most menopausal signs are influenced by women's perception and feeling and therefore not exclusively objective (Katz et al., 1996). As such, recall bias can be considered non-differential for the data analyses in this thesis.

5.4.4 Questionnaire design

The survey questionnaires used in this research are tailored to examine mid-age women's physical and mental health, as well as psychosocial aspects of health (such as socio-demographic and lifestyle factors) and their use of health services. It was not designed to specifically investigate that these CAM modalities were used for menopause-related symptoms. However, as menopause generally occurs between the ages of 40 and 58 years (see section 1.4.1), it could infer that women of the mid-age cohort who are aged 56-61 years in 2007 and aged 59-64 years in 2010 are menopausal Therefore, although the data in this study are not collected on CAM use with direct association to menopause-related symptoms specifically, it is an exceptional opportunity to analyse data from a large nationally representative sample longitudinally, to add novel insights about CAM use for menopause-symptom relief.

5.5 Strengths of the research

The ALSWH, on which this thesis is based on, is a highly respected, well established and rigorous cohort study which attracts more than 83% response rates of all mid-age

cohort surveys (www.alswh.org.au). The majority of research focusing on CAM use in menopause care has provided a snapshot (cross-sectional analysis) of health services utilisation. Whilst such work has provided excellent insights, strength of this present research lies in the first opportunity to analyse the use of CAM in menopause via a long-term, population-based, nationally representative sample from a well-designed longitudinal study, enabling examination of the trends of menopausal women's CAM use. This cohort study consists of a large sample of menopausal women (more than 10,000 women have engaged in this 15-year study), generating adequate statistical power to elucidate statistical associations related to CAM use. Further, a number of influential factors, CAM modalities, as well as menopause-related symptoms are collected in this study (see Chapter 3), allowing examination of broad-ranging factors associated with CAM utilisation. In addition, as data analysed in this thesis were collected over a three-year period, CAM use can be observed across a range of menopausal women's ages and at different menopausal status.

Overall, this study presents substantial indications of both utilisation of CAM consultation and self-prescription for a broad range of common menopause-related symptoms, stratified by menopausal status, using a combination of cross-sectional and longitudinal analyses. The significance of the findings shown in the study compensates for the above limitations.

5.6 Future research directions

This thesis outlines a number of issues that require future research attention and identifies some design features which can advance and improve further investigation into this particular area of women's healthcare. These issues and features are outlined in detail below.

While this thesis provides the first cross-sectional and longitudinal analyses of CAM use amongst menopausal women from a large nationally representative sample of mid-age women, there remains much detail around menopausal women's CAM use which requires further investigation. As illustrated in this thesis, different CAM modalities (across and between CAM practitioner and self-prescribed CAM use) appear to play different roles in the treatment-seeking behaviour of menopausal women and it is

important that future research pays close attention to comparing and contrasting use of specific and different CAM in relation to menopause care. Indeed, as CAM researchers have noted, there is much to be gained from adopting a nuanced research approach that moves beyond categorising CAM as a homogenous group of practices and treatments (Adams et al., 2013) and research of CAM use for menopause care appears to be no exception. Equally important, while being careful not to lose sight of the role and position of different CAM and their use in the broad arena of menopause care, this thesis also accentuates the need for future research on this topic to examine and help understand the way women's CAM treatment-seeking, decision-making and experience compares and/or contrasts with regards to different individual menopausal symptoms. Similarly, as the study presented in this thesis highlights, women's menopausal status appears to be an influential factor in the type of CAM utilised and this is an area which also warrants close research attention – future empirical study should be cognisant of, and fully explore, the relationship between menopausal status and women's use of different CAM practitioners and products.

Given the substantial prevalence of self-prescribed CAM use amongst menopausal women identified in the study, this is certainly an area that deserves much more empirical, multi-disciplinary investigation. Moreover, as identified in recent commentaries, self-prescribed CAM use (sometimes defined as CAM self-care that does not necessitate the involvement or guidance of a health professional) constitutes a fruitful topic that has largely escaped in-depth and coordinated examination across the health research community more generally (Adams, Kroll, & Broom, 2014). Examination of such CAM self-care (of which self-prescribed CAM is a substantial component) is a worthy topic that has much to offer our understanding of the wider healthcare utilisation of menopausal women. In particular, it is important that further enquiry provide detailed examination of the health-seeking behaviour, decision-making, information seeking/sharing, and communication of menopausal women who utilise self-prescribed CAM practices and products. Such work requires multi-disciplinary, multi-method designs with particular attention to qualitative methods in order to fully reflect the 'lived' experiences and perceptions of women central to informing our interpretation and understanding of the use of these significant self-prescribed treatments for menopause. The importance of future empirical investigation focusing

upon the use of self-prescribed CAM within menopause care is obviously heightened by the nature and extent to which menopausal women utilising these treatments disclose and communicate their CAM use to their conventional medical practitioner. While some work has begun to explore this topic across menopause care more generally (Gollschewski et al., 2008), much further investigation is also required to unpack and interpret the interface between menopausal women and a range of medical professionals (principally GPs and gynaecologists) around self-prescribed CAM use. As this future research suggestion highlights, there are also other principal stakeholders other than patients/menopausal women - health practitioners across both conventional medicine and CAM – who are often central to the care of most menopausal women (to varying degrees) and who should also be the focus of future enquiry on CAM use in menopause.

With a focus upon conventional medical providers, future research should examine the professional culture, referral patterns and perspectives of GPs, gynaecologists and endocrinologists with regards to CAM and CAM use by menopausal women in their care. While previous research has begun to shed light on these topics with regards to other aspects of CAM use (Wardle, Sibbritt, & Adams, 2013c; Wardle, Sibbritt, & Adams, 2014b), there is little research which has drawn upon fieldwork with conventional medical providers to directly investigate CAM use for menopause. Such future enquiry can provide further insights into the current position and role, as well as future challenges and opportunities, of CAM in the wider care of menopausal women.

Similarly, the grass-roots role of the differing CAM practitioners treating menopausal women is also an important area for further enquiry. In addition to the need for research concentrating upon the relationship and consultation of these providers with menopausal women, there is also a need for comprehensive workforce surveys (preferably national) focusing upon the provision and services of different CAM professions with regards to treating women with menopausal-related symptoms. Lastly, completing the focus upon providers, the prevalence and nature of relationships and communication between conventional medical practitioners and CAM practitioners is also an area worthy of further research with regards to menopause care.

All these areas for future research outlined above contribute to, and centre upon, furthering the HSR body of literature examining CAM use amongst menopausal women. Meanwhile, the study presented in this thesis also suggests a number of CAM are utilised by menopausal women despite the clinical evidence for their use being inconclusive or lacking. This context helps highlight the possible disconnect between CAM use and the evidence of efficacy for CAM for menopause-related symptoms and also illustrates the need for further clinical research (including randomised controlled trial designs) to help supplement HSR and other disciplinary approaches, as well as to help complete the broad critical evidence-based approach to CAM in menopause care.

CHAPTER 6 CONCLUSION

This thesis has applied a HSR approach to an examination of the consultations with four groups of CAM practitioners and the use of five types of self-prescribed CAM for 11 menopause-related symptoms. The study has identified a number of significant findings.

Firstly, more than 70% of participating menopausal women (including women with hysterectomy, women with oophorectomy, and natural menopausal women) utilised at least one self-prescribed CAM, and consulted a GP in the previous 12 months. Natural menopausal women were more likely to use self-prescribed yoga/meditation than surgical menopausal women, with no significant associations identified between CAM consultations and menopausal status. Women with surgical menopause were more likely to consult a GP, a specialist doctor, and/or use HRT than women with natural menopause.

Secondly, a substantial levels of significant associations were identified between the consultation with a massage therapist, a naturopath/herbalist, a chiropractor/osteopath, and/or an acupuncturist, and a range of common menopause-related symptoms (hot flushes, night sweats, depression, anxiety, tiredness, stiff or painful joints, back pain, vaginal discharge, leaking urine, headaches, and palpitations), stratified by hysterectomy status, oophorectomy status, and natural menopausal status. The substantial difference occurs across groups of CAM practitioners which are associated with the menopause-related symptoms, with menopause-related back pain recognized as a significant factor associated with consultation with a chiropractor/osteopath for all menopausal women.

Third, the use of self-prescribed vitamins/minerals, yoga or meditation, herbal medicines, aromatherapy oils and Chinese medicines, at different menopausal status (oophorectomy, hysterectomy, and natural menopause), were also shown to be significantly associated with one or a number of menopause-related symptoms, including hot flushes, night sweats, depression, anxiety, tiredness, stiff or painful joints, back pain, vaginal discharge, leaking urine, headaches, and palpitations. The choice of self-prescribed CAM use in relation to hot flushes and night sweats differ amongst

menopausal status. Amongst these two symptoms, no single symptom, however, was significantly associated with all types of CAM therapies/products use examined.

Finally, the longitudinal analyses identified extensive associations between use of commonly accessed CAM and a wide range of menopause-related symptoms over time in a large sample of women experiencing natural menopause, hysterectomy, and oophorectomy. Women with menopause-related symptoms, compared to women without menopause-related symptoms, were more likely to use self-prescribed CAM but were not more likely to consult a CAM practitioner. CAM use was lower amongst surgical menopausal women compared with naturally postmenopausal women, and decreased with increasing age of menopausal women. Menopause-related back pain was exclusively the significant symptom associated with use of all groups of CAM practitioners investigated across time, while no menopause-related symptom was associated with the use of all types of CAM self-prescription.

This thesis has not only demonstrated the key research results shown above, but also identified several future areas of research to verify and develop the findings. The topic of this study has brought about many unexplored prevalence rates and associations from the approach of HSR. Likewise, this study also progresses the HSR approach on CAM use with the inclusion of both CAM practitioner consultation and self-prescribed CAM use. A HSR approach has been validated by the substantial findings which highlight the significant associations between common CAM consultations/CAM self-prescription and a broad range of menopause-related symptoms stratified by menopausal status. The CAM use identified amongst a large nationally representative sample of menopausal women reported in this thesis can help other investigators to create further research based on this solid foundation.

APPENDICES

Appendix 1 Australian Longitudinal Study on Women's Health fifth survey of the mid-age cohort women (Survey 5)

How to complete this survey

This is the fifth "main" survey for mid-age women.
As the purpose of the project is to look at changes over time, some of the questions are the same as those in previous surveys.

Please answer every question you can. If you are unsure about how to answer a question, mark the response for the closest answer to how you feel.

Please write any comments or important information on page 30. We are not able to read comments written elsewhere throughout the survey.

Please read the instructions above each question carefully. Some require you to only answer those options which are applicable to you. Other questions require you to mark one answer on each line. The questions may also refer to different time periods.

INSTRUCTIONS:

- Use a black/blue biro
- Do not fold or bend this survey
- **Cross the boxes like this:**

In general, would you say your health is:
(Mark one only)

Excellent	☐	
Very good	☐	
Good	☒	*You would mark this one if you think your health is good*
Fair	☐	
Poor	☐	

- **Print clearly in the boxes like this:**

What is your postcode?
(PRINT clearly in the boxes)

2	3	0	8

- **Correct mistakes like this:**

When you go to a General Practitioner:
(Mark one on each line)

	Always	Most of the time	Some-times	Rarely or never
Do you go to the same place?	☐	☒	☒	☐

If you make a mistake simply scribble it out and clearly mark the correct answer with a cross

If you need help to answer any questions, please ring 1800 068 081
(This is a FREECALL number)

* *If you are concerned about any of your health experiences and would like some help, you may like to contact:*
  - *your nearest Women's Health Centre or Community Health Centre;*
  - *your General Practitioner for advice about who would be the best person in your community for you to talk to.*
* *If you feel distressed NOW and would like someone to talk to, you could ring Lifeline on 131 114 (local call).*

women's health is about how you are feeling

The questions on the first page ask only about NOW - how your health is NOW and about how your health limits certain activities NOW.

Q1 **In general, would you say your health is:**
(Mark one only)

- Excellent ☐
- Very good ☐
- Good ☐
- Fair ☐
- Poor ☐

Q2 **Compared to one year ago, how would you rate your health in general now?**
(Mark one only)

- Much better now than one year ago ☐
- Somewhat better now than one year ago ☐
- About the same now as one year ago ☐
- Somewhat worse now than one year ago ☐
- Much worse now than one year ago ☐

Q3 **The following questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?**
(Mark one on each line)

		Yes, limited a lot	Yes, limited a little	No, not limited at all
a	VIGOROUS activities, such as running, lifting heavy objects, participating in strenuous sports	☐	☐	☐
b	MODERATE activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	☐	☐	☐
c	Lifting or carrying groceries	☐	☐	☐
d	Climbing SEVERAL flights of stairs	☐	☐	☐
e	Climbing ONE flight of stairs	☐	☐	☐
f	Bending, kneeling or stooping	☐	☐	☐
g	Walking MORE THAN ONE kilometre	☐	☐	☐
h	Walking HALF a kilometre	☐	☐	☐
i	Walking 100 metres	☐	☐	☐
j	Bathing or dressing yourself	☐	☐	☐

The questions on this page and the next one ask about your health IN THE LAST FOUR WEEKS.

Q4 **During the PAST FOUR WEEKS, have you had any of the following problems with your work *(including your work outside the home and housework)* or other regular daily activities AS A RESULT OF YOUR PHYSICAL HEALTH?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Were limited in the kind of work or other activities	☐	☐
d	Had difficulty performing the work or other activities *(eg it took extra effort)*	☐	☐

Q5 **During the PAST FOUR WEEKS, have you had any of the following problems with your work or other regular daily activities AS A RESULT OF ANY EMOTIONAL PROBLEMS *(such as feeling depressed or anxious)*?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Didn't do work or other activities as carefully as usual	☐	☐

Q6 **During the PAST FOUR WEEKS, to what extent have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your normal social activities with family, friends, neighbours or groups?**

(Mark one only)

- ☐ Not at all
- ☐ Slightly
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

Q7 **How much BODILY pain have you had during the PAST FOUR WEEKS?**

(Mark one only)

- ☐ No bodily pain
- ☐ Very mild
- ☐ Mild
- ☐ Moderate
- ☐ Severe
- ☐ Very severe

Q8 **During the PAST FOUR WEEKS, how much did PAIN interfere with your normal work *(including both work outside the home and housework)*?**

(Mark one only)

- Not at all ☐
- A little bit ☐
- Moderately ☐
- Quite a bit ☐
- Extremely ☐

Q9 **For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST FOUR WEEKS:**

(Mark one on each line)

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a	Did you feel full of life?	☐	☐	☐	☐	☐	☐
b	Have you been a very nervous person?	☐	☐	☐	☐	☐	☐
c	Have you felt so down in the dumps that nothing could cheer you up?	☐	☐	☐	☐	☐	☐
d	Have you felt calm and peaceful?	☐	☐	☐	☐	☐	☐
e	Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
f	Have you felt down?	☐	☐	☐	☐	☐	☐
g	Did you feel worn out?	☐	☐	☐	☐	☐	☐
h	Have you been a happy person?	☐	☐	☐	☐	☐	☐
i	Did you feel tired?	☐	☐	☐	☐	☐	☐

Q10 **During the PAST FOUR WEEKS, how much of the time have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities *(like visiting friends, relatives, etc)*?**

(Mark one only)

- All of the time ☐
- Most of the time ☐
- Some of the time ☐
- A little of the time ☐
- None of the time ☐

Q11 **How TRUE or FALSE is EACH of the following statements for you?**

(Mark one on each line)

		Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a	I seem to get sick a little easier than other people	☐	☐	☐	☐	☐
b	I am as healthy as anybody I know	☐	☐	☐	☐	☐
c	I expect my health to get worse	☐	☐	☐	☐	☐
d	My health is excellent	☐	☐	☐	☐	☐

■ *women's health* *is about using health services*

Q12 **How many times have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		None	Once or twice	3 or 4 times	5 or 6 times	7-12 times	13-24 times	25 or more times
a	A family doctor or another General Practitioner (GP)	☐	☐	☐	☐	☐	☐	☐
b	A hospital doctor *(eg in outpatients or casualty)*	☐	☐	☐	☐	☐	☐	☐
c	A specialist doctor	☐	☐	☐	☐	☐	☐	☐

Q13 **Have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		Yes	No
a	Physiotherapist	☐	☐
b	Counsellor / Psychologist / Social worker	☐	☐
c	A community nurse, practice nurse, or nurse practitioner	☐	☐
d	Optician / Optometrist	☐	☐
e	Dietitian	☐	☐
f	Podiatrist	☐	☐
g	Massage therapist	☐	☐
h	Naturopath / Herbalist	☐	☐
i	Chiropractor	☐	☐
j	Osteopath	☐	☐
k	Acupuncturist	☐	☐
l	Other alternative health practitioner *(eg aromatherapist, homeopath, reflexologist, iridologist)*	☐	☐

Q14 **How often have you used the following therapies for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		Never	Rarely	Sometimes	Often
a	Vitamins / Minerals	☐	☐	☐	☐
b	Yoga or meditation	☐	☐	☐	☐
c	Herbal medicines	☐	☐	☐	☐
d	Aromatherapy oils	☐	☐	☐	☐
e	Chinese medicines	☐	☐	☐	☐
f	Prayer or spiritual healing	☐	☐	☐	☐
g	Other alternative therapies	☐	☐	☐	☐

Q15 **When you go to a General Practitioner:**
(Mark one on each line)

		Always	Most of the time	Some-times	Rarely or never
a	Do you go to the same place?	☐	☐	☐	☐
b	Do you usually see the same doctor?	☐	☐	☐	☐

■

Q16 **How would you rate the cost to you of your LAST visit to a General Practitioner?**
(Mark one only)

- ☐ No cost to me
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Don't know

Q17 **Do you have a Health Care Card?**
This is a card that entitles you to discounts and assistance with medical expenses. This is not the same as a Medicare card.
(Mark one only)

- ☐ Yes
- ☐ No

Q18a **Do you have private health insurance for HOSPITAL COVER?**
(Mark one only)

- ☐ Yes
- ☐ No – I am covered by Veterans' Affairs
- ☐ No – because I can't afford the cost
- ☐ No – because I don't think you get value for money
- ☐ No – because I don't think I need it
- ☐ No – other reason

Q18b **Do you have private health insurance for ANCILLARY services (eg dental, physiotherapy)?**
(Mark one only)

- ☐ Yes
- ☐ No – I am covered by Veterans' Affairs
- ☐ No – because I can't afford the cost
- ☐ No – because I don't think you get value for money
- ☐ No – because I don't think I need it
- ☐ No - because the services are not available where I live
- ☐ No – other reason

Q19 **Have you been admitted to hospital in the LAST TWELVE MONTHS?**
(Mark one only)

- ☐ No
- ☐ Yes, day only
- ☐ Yes, spent at least one night

Q20 **When did you last have:**
(Mark one on each line)

		In the last 2 years	2-5 years ago	More than 5 years ago	Never	Don't know
a	A Pap test?	☐	☐	☐	☐	☐
b	A mammogram?	☐	☐	☐	☐	☐

Q21 **Have you EVER had an abnormal result from:** *(Mark one on each line)*

		Yes	No	Don't know
a	A Pap test?	☐	☐	☐
b	A mammogram?	☐	☐	☐

Q22 **In the PAST THREE YEARS, have you:** *(Mark all that apply on each line)*

		Doctor	Nurse	Other	Not checked
a	Had your blood pressure checked?	☐	☐	☐	☐
b	Had your cholesterol checked?	☐	☐	☐	☐
c	Had your blood sugar level checked?	☐	☐	☐	☐
d	Had your skin checked *(eg spots, lesions, moles)*?	☐	☐	☐	☐

Q23 **In the PAST THREE YEARS, have you:** *(Mark one on each line)*

		Yes	No
a	Had your breasts examined by a doctor or nurse?	☐	☐
b	Carried out *regular monthly* breast self examination?	☐	☐
c	Had a bone density test?	☐	☐
d	Had a test for bowel cancer?	☐	☐
e	Had a reminder from your general practice to have a screening test *(eg blood pressure, cholesterol, blood sugar, skin)*?	☐	☐

Q24 **In the PAST THREE YEARS, have you received advice/information about lifestyle changes from any of these sources?** *(Mark one on each line)*

		Yes	No
a	A doctor	☐	☐
b	A nurse	☐	☐
c	Other health professional *(eg physiotherapist, naturopath)*	☐	☐
d	Program or organisation *(eg weight loss program, gym, self help group)*	☐	☐
e	Books, magazines	☐	☐
f	The internet	☐	☐
g	Television	☐	☐
h	Radio	☐	☐
i	Family or friends	☐	☐
j	Private health fund	☐	☐

Q25 **Are you CURRENTLY taking:** *(Mark one on each line)*

		Yes	No
a	The oral contraceptive pill?	☐	☐
b	Hormone Replacement Therapy (HRT)?	☐	☐

Q26 **Have you:** *(Mark one on each line)*

		Yes	No
a	Had a hysterectomy?	☐ ← If Yes, go to Q29	☐
b	Had a period or menstrual bleeding in the last 12 months?	☐	☐ → If No, go to Q28
c	Had a period or menstrual bleeding in the last 3 months?	☐	☐

Q27 **Compared with twelve months ago, are your periods:** *(Mark one only)*

- Less frequent ☐
- About the same ☐
- More frequent ☐
- Changeable ☐

Q28 **If you have reached menopause, at what age did your periods completely stop?**

(Please write the age in the box) ☐☐ years Not applicable ☐

Q29 **Have you ever had Gestational Diabetes (diabetes during pregnancy)?**
(Mark one only)

- ☐ Yes
- ☐ No

Q30 **Thinking about your own health care, how would you rate the following:**
(Mark one on each line)

		Excellent	Very good	Good	Fair	Poor	Don't know
a	Access to medical specialists if you need them	☐	☐	☐	☐	☐	☐
b	Access to a hospital if you need it	☐	☐	☐	☐	☐	☐
c	Access to medical care in an emergency	☐	☐	☐	☐	☐	☐
d	Access to after-hours medical care	☐	☐	☐	☐	☐	☐
e	Access to a GP who bulk bills	☐	☐	☐	☐	☐	☐
f	Access to a female GP	☐	☐	☐	☐	☐	☐
g	Hours when a GP is available	☐	☐	☐	☐	☐	☐
h	Number of GPs you have to choose from	☐	☐	☐	☐	☐	☐
i	Ease of seeing the GP of your choice	☐	☐	☐	☐	☐	☐
j	How long you wait to get a GP appointment	☐	☐	☐	☐	☐	☐
k	The outcomes of your medical care *(how much you are helped)*	☐	☐	☐	☐	☐	☐
l	Ease of obtaining a mammogram	☐	☐	☐	☐	☐	☐
m	Ease of obtaining a Pap test	☐	☐	☐	☐	☐	☐
n	Access to a counselling service if you need it	☐	☐	☐	☐	☐	☐

Q31 **In the LAST TWELVE MONTHS have you consulted a dentist?** *(Mark one only)*

- ☐ No, I did not need to see a dentist
- ☐ No, because there was no dentist available locally
- ☐ No, I could not get there because of travel difficulties
- ☐ No, because it would cost more than I could afford
- ☐ No, I did not go to the dentist because of another reason
- ☐ Yes, I saw a dentist

Q32 **How would you rate the overall condition of your teeth, dentures or gums?**
(Mark one only)

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

Q33 **There are 16 teeth, including wisdom teeth in the upper jaw. How many teeth do you have remaining in your UPPER jaw?**
(Please write number in boxes) ☐☐

Q34 **There are 16 teeth, including wisdom teeth in the lower jaw. How many teeth do you have remaining in your LOWER jaw?**
(Please write number in boxes) ☐☐

Q35 **Do you wear a denture or false teeth in your upper jaw?** *(Mark one only)*

Yes ☐
No ☐

Q36 **Do you wear a denture or false teeth in your lower jaw?** *(Mark one only)*

Yes ☐
No ☐

Q37 **In the LAST TWELVE MONTHS have you:** *(Mark all that apply)*

		Yes
a	Slipped, tripped or stumbled?	☐
b	Had a fall to the ground?	☐
c	Been injured as a result of a fall?	☐
d	Needed to seek medical attention for an injury from a fall?	☐
e	Had any other injury from an accident at your home?	☐
f	Broken or fractured any bone/s?	☐
g	None of the above	☐

Q38 **In the PAST THREE YEARS, have you been diagnosed or treated for:** *(Mark all that apply)*

		Yes, in the past 3 years
a	Diabetes *(high blood sugar)*	☐
b	Impaired glucose tolerance	☐
c	Osteoarthritis	☐
d	Rheumatoid arthritis	☐
e	Other arthritis	☐
f	Heart disease *(including heart attack, angina)*	☐
g	Hypertension *(high blood pressure)*	☐
h	Stroke	☐
i	Low iron level *(iron deficiency or anaemia)*	☐
j	Asthma	☐
k	Bronchitis / emphysema	☐
l	Osteoporosis	☐
m	Breast cancer	☐
n	Cervical cancer	☐
o	Skin cancer *(including melanoma)*	☐
p	Other cancer *(please specify on page 30)*	☐
q	Depression	☐
r	Anxiety / nervous disorder	☐
s	Other psychiatric disorder	☐
t	Chronic Fatigue Syndrome	☐
u	Sexually transmitted infection *(eg genital herpes or warts, chlamydia)*	☐
v	Other major illness or disability *(please specify on page 30)*	☐
w	None of these conditions	☐

Q39 **Compared to when you were in your twenties, how good are you at:**

(Mark one on each line)

		Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now
a	Remembering the name of a person just introduced to you?	☐	☐	☐	☐	☐
b	Recalling telephone numbers or other numbers that you use on a daily or weekly basis?	☐	☐	☐	☐	☐
c	Recalling where you put objects *(such as keys)* in your home?	☐	☐	☐	☐	☐
d	Remembering specific facts from a newspaper or magazine article you have just finished reading?	☐	☐	☐	☐	☐
e	Remembering the item(s) you intend to buy when you arrive at the shops?	☐	☐	☐	☐	☐
f	In general, how would you describe your memory compared to when you were in your twenties?	☐	☐	☐	☐	☐

Q40 **In the PAST THREE YEARS, have you had any of the following operations or procedures**

(Mark all that apply)

		Yes, in the past 3 years
a	Both ovaries removed	☐
b	Repair of prolapsed vagina, bladder or bowel?	☐
c	Endometrial ablation *(removal of the lining of the uterus)*	☐
d	Joint replacement *(eg hip, knee)*	☐
e	Mastectomy *(removal of one or both breasts)*	☐
f	Lumpectomy *(removal of lump from breasts)*	☐
g	Removal of skin cancer	☐
h	Any cancer surgery *(other than skin or breast)*	☐
i	Chemotherapy or radiotherapy for any cancer	☐
j	Breast biopsy *(taking a sample of breast tissue)*	☐
k	Hysteroscopy *(investigative procedure to examine the uterus)*	☐
l	Cholecystectomy *(gall bladder removed)*	☐
m	Gastroscopy / colonoscopy	☐
n	None of these	☐

Q41 **Do you have any of these sleeping problems?**

(Mark all that apply)

		Yes
a	Waking up in the early hours of the morning	☐
b	Lying awake for most of the night	☐
c	Taking a long time to get to sleep	☐
d	Worry keeping you awake at night	☐
e	Sleeping badly at night	☐
f	None of these problems	☐

Q42 **In the PAST FOUR WEEKS, have you taken any:**

(Mark one on each line)

		Yes	No	
a	Medications prescribed by a doctor?	☐	☐	If No to both, go to Q44
b	Medications / vitamins / supplements or herbal therapies bought without a prescription at the chemist, supermarket or health food shop?	☐	☐	

Q43 **Please write down the names of all your medications, vitamins, supplements or herbal therapies. Where possible, copy names from the packets. (Please write in block letters)**

Q44 **In the LAST 12 MONTHS, have you had any of the following:**
(Mark one on each line in column A.
For all that apply also answer column B.)

		A				B
		Never	Rarely	Some-times	Often	For the problems you had, DID you seek help? Mark here if you DID seek help
a	Allergies, hayfever, sinusitis	☐	☐	☐	☐	☐
b	Breathing difficulty	☐	☐	☐	☐	☐
c	Indigestion / heartburn	☐	☐	☐	☐	☐
d	Chest pain	☐	☐	☐	☐	☐
e	Headaches / migraines	☐	☐	☐	☐	☐
f	Severe tiredness	☐	☐	☐	☐	☐
g	Stiff or painful joints	☐	☐	☐	☐	☐
h	Back pain	☐	☐	☐	☐	☐
i	Urine that burns or stings	☐	☐	☐	☐	☐
j	Heamorrhoids *(piles)*	☐	☐	☐	☐	☐
k	Other bowel problems	☐	☐	☐	☐	☐
l	Vaginal discharge or irritation	☐	☐	☐	☐	☐
m	Hot flushes	☐	☐	☐	☐	☐
n	Night sweats	☐	☐	☐	☐	☐
o	Eyesight problems	☐	☐	☐	☐	☐
p	Leaking urine	☐	☐	☐	☐	☐
q	Mouth, teeth or gum problems	☐	☐	☐	☐	☐
r	Avoided eating some foods because of problems with your teeth, mouth or dentures	☐	☐	☐	☐	☐
s	Toothache	☐	☐	☐	☐	☐
t	Hearing problems	☐	☐	☐	☐	☐
u	Depression	☐	☐	☐	☐	☐
v	Anxiety	☐	☐	☐	☐	☐
w	Episodes of intense anxiety *(eg panic attacks)*	☐	☐	☐	☐	☐
x	Palpitations *(feeling that your heart is racing or fluttering in your chest)*	☐	☐	☐	☐	☐

Q45 **In the PAST WEEK, have you been feeling that life isn't worth living?** *(Mark one only)*

Yes ☐
No ☐

Q46 **In the PAST 6 MONTHS, have you EVER deliberately hurt yourself or done anything that you knew might have harmed or even killed you?** *(Mark one only)*

Yes ☐
No ☐

If you answered YES to either of the last 2 questions, you might like to talk to someone about how you are feeling. You could ring Lifeline on 131114 (local call).

women's health is about coping with stress

Q47 **Over the LAST TWELVE MONTHS, how stressed have you felt about the following areas of your life:** *(Mark one on each line)*

		Not applicable	Not at all stressed	Somewhat stressed	Moderately stressed	Very stressed	Extremely stressed
a	Own health		☐	☐	☐	☐	☐
b	Health of family members	☐	☐	☐	☐	☐	☐
c	Work / Employment	☐	☐	☐	☐	☐	☐
d	Living arrangements		☐	☐	☐	☐	☐
e	Study	☐	☐	☐	☐	☐	☐
f	Money		☐	☐	☐	☐	☐
g	Relationship with parents	☐	☐	☐	☐	☐	☐
h	Relationship with partner / spouse	☐	☐	☐	☐	☐	☐
i	Relationship with children	☐	☐	☐	☐	☐	☐
j	Relationship with other family members	☐	☐	☐	☐	☐	☐

Q48 **How much do you agree or disagree with each of the following statements?** *(Mark one on each line)*

		Disagree strongly	Disagree	Disagree slightly	Agree slightly	Agree	Agree strongly
a	At home, I feel I have control over what happens in most situations	☐	☐	☐	☐	☐	☐
b	I feel that what happens in my life is often determined by factors beyond my control	☐	☐	☐	☐	☐	☐
c	Over the next 5-10 years I expect to have more positive than negative experiences	☐	☐	☐	☐	☐	☐
d	I often have the feeling that I am being treated unfairly	☐	☐	☐	☐	☐	☐
e	In the past 10 years my life has been full of changes without my knowing what will happen next	☐	☐	☐	☐	☐	☐
f	I gave up trying to make big improvements or changes in my life a long time ago	☐	☐	☐	☐	☐	☐

Q49 **Thinking about your current approach to life, please indicate how much you think each statement describes you:** *(Mark one on each line)*

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a	In uncertain times, I usually expect the best	☐	☐	☐	☐	☐
b	If something can go wrong for me, it will	☐	☐	☐	☐	☐
c	I'm always optimistic about my future	☐	☐	☐	☐	☐
d	I hardly ever expect things to go my way	☐	☐	☐	☐	☐
e	I rarely count on good things happening to me	☐	☐	☐	☐	☐
f	Overall, I expect more good things to happen to me than bad	☐	☐	☐	☐	☐

Q50 What is your Postcode?

a What is your RESIDENTIAL postcode? *(where you live)*

b What is the postcode of your POSTAL ADDRESS? *(if different from residential)*

Q51 Which of the following events have you experienced?
(Mark all that apply)

		A Yes, in the last 12 months	B Yes, more than 12 months ago
a	Major personal illness	☐	☐
b	Major personal injury or involvement in a serious accident	☐	☐
c	Major personal achievement	☐	☐
d	Birth of a grandchild	☐	☐
e	Major surgery *(not including dental work)*	☐	☐
f	Going through menopause	☐	☐
g	Major decline in health of spouse or partner	☐	☐
h	Major decline in health of other close family member or close friend	☐	☐
i	Starting a new, close personal relationship	☐	☐
j	Infidelity of spouse or partner	☐	☐
k	Break-up of a close personal relationship	☐	☐
l	Divorce	☐	☐
m	Major conflict with teenage or older children	☐	☐
n	Child or other family member leaving home *(due to marriage, to attend university etc)*	☐	☐
o	Death of a spouse or partner	☐	☐
p	Death of a child	☐	☐
q	Death of other close family member	☐	☐
r	Death of close friend	☐	☐
s	Changing your type of work / hours / conditions / responsibilities at work	☐	☐
t	Retirement	☐	☐
u	Your spouse or partner retiring from work	☐	☐
v	Being made redundant	☐	☐
w	Your spouse / partner being made redundant	☐	☐
x	Decreased income	☐	☐
y	Moving house	☐	☐
z	Natural disaster (*fire, flood, drought, earthquake etc*) or house fire	☐	☐
aa	Major loss or damage to personal property	☐	☐
bb	Being robbed	☐	☐
cc	Being pushed, grabbed, shoved, kicked or hit	☐	☐
dd	Being forced to take part in unwanted sexual activity	☐	☐
ee	Legal troubles or involved in a court case	☐	☐
ff	Family member / close friend being arrested / in gaol	☐	☐
gg	You or a family member involved in problem gambling	☐	☐
hh	None of these events	☐	

Q52 **Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way DURING THE LAST WEEK.**
(Mark one on each line)

		Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
a	I was bothered by things that don't usually bother me	☐	☐	☐	☐
b	I had trouble keeping my mind on what I was doing	☐	☐	☐	☐
c	I felt depressed	☐	☐	☐	☐
d	I felt that everything I did was an effort	☐	☐	☐	☐
e	I felt hopeful about the future	☐	☐	☐	☐
f	I felt fearful	☐	☐	☐	☐
g	My sleep was restless	☐	☐	☐	☐
h	I was happy	☐	☐	☐	☐
i	I felt lonely	☐	☐	☐	☐
j	I could not "get going"	☐	☐	☐	☐
k	I felt terrific	☐	☐	☐	☐

Q53 **In the past month:** *(Mark one on each line)*

		Yes	No
a	Have you felt keyed up or on edge?	☐	☐
b	Have you been worrying a lot?	☐	☐
c	Have you been irritable?	☐	☐
d	Have you had difficulty relaxing?	☐	☐
e	Have you been sleeping poorly?	☐	☐
f	Have you had headaches or neck aches?	☐	☐
g	Have you had any of the following: trembling, tingling, dizzy spells, sweating, diarrhoea or needing to pass urine more often than normal?	☐	☐
h	Have you been worried about your health?	☐	☐
i	Have you had difficulty falling asleep?	☐	☐

Q54 **Do you regularly NEED help with daily tasks because of long-term illness, disability or frailty *(eg personal care, getting around, preparing meals etc)*?**
(Mark one only)

Yes ☐
No ☐

The following sections are about other health habits, time use and your relationships.

Often there are no "right" or "wrong" answers – we are interested only in your opinion or feelings.

If you feel uncomfortable about answering a question, just leave it and go on to the next one, but please try to finish the survey if you can.

You may like to take a break now and do the second part later.

■ *women's health* *is about healthy weight and shape*

Q55 **a** **How much do you weigh?** *(no clothes or shoes)*

☐☐☐ **kg** **OR** ☐☐ **stones** ☐☐ **pounds**

b **How tall are you without shoes?**

☐☐☐ **cm** **OR** ☐☐ **feet** ☐☐ **inches**

Q56 **What is your waist measurement?**

Please measure your waist while in your underwear. If possible, get someone to help you take the measurement. Find your navel (belly button) and measure at that level. Be careful not to have the tape too tight. You should be able to slip your little finger under it comfortably. Write the measurement to the ***nearest*** *centimetre (or inch if this is the only measure you have available).*

☐☐☐ **cm** **OR** ☐☐ **inches**

Q57 **In the LAST THREE YEARS, have you:**

(Mark one on each line)

		Yes	No
a	Lost 5 kg or more on purpose?	☐	☐
b	Lost 5 kg or more for any other reason?	☐	☐
c	Gained 5 kg or more?	☐	☐

Q58 **Have you used any of these methods to lose weight or to control your weight or shape in the LAST TWELVE MONTHS?**

(Mark one on each line)

		Yes	No
a	Commercial weight loss programs *(eg Weight Watchers, Lite n' Easy, Sureslim, Jenny Craig)*	☐	☐
b	Meal replacements or slimming products *(eg OPTIFAST, Herbalife)*	☐	☐
c	Exercise	☐	☐
d	Cut down on the size of meals or between meal snacks	☐	☐
e	Cut down on fats *(low fat)* and / or sugars	☐	☐
f	Low glycaemic index (GI) diet	☐	☐
g	Diet book diets *(eg Atkins, Zone, CSIRO diet, Liver Cleansing diet)*	☐	☐
h	Laxatives, diuretics or diet pills *(eg Xenical, Reductil)*	☐	☐
i	Fasting	☐	☐
j	Smoking	☐	☐
k	Other *(please specify on page 30)*	☐	☐

■

Q59 **How often do you usually drink alcohol?**
(Mark one only)

- I have never drunk alcohol in my life ☐ → Go to Q62
- I never drink alcohol, but I have in the past ☐ → Go to Q62
- I drink rarely ☐
- Less than once a week ☐
- On 1 or 2 days a week ☐
- On 3 or 4 days a week ☐
- On 5 or 6 days a week ☐
- Every day ☐

Q60 **On a day when you drink alcohol, how many drinks do you usually have?**
(Mark one only)

- 1 or 2 drinks per day ☐
- 3 or 4 drinks per day ☐
- 5 to 8 drinks per day ☐
- 9 or more drinks per day ☐

Q61 **How often do you have five or more drinks of alcohol on one occasion?**
(Mark one only)

- Never ☐
- Less than once a month ☐
- About once a month ☐
- About once a week ☐
- More than once a week ☐

Q62 **The next question is about your alcohol consumption during different stages of your life. On average, how many drinks did you usually drink PER WEEK in your:**
(Mark one on each line)

		No alcohol	1-7 drinks	8-14 drinks	15 or more drinks
a	Late teens	☐	☐	☐	☐
b	20s	☐	☐	☐	☐
c	30s	☐	☐	☐	☐
d	40s	☐	☐	☐	☐
e	50s	☐	☐	☐	☐

Q63 **How many glasses / cups of non-alcoholic drinks do you usually have each day**
(eg juice, tea, coffee, water, milk, etc)?
(Mark one only)

- 0 - 2 glasses ☐
- 3 - 5 glasses ☐
- 6 - 8 glasses ☐
- 9 or more glasses ☐

Questions 64 to 74 are modified from the Cancer Council of Victoria Food Frequency Questionnaire and are used with permission.

This section is about your **usual** eating habits over the **LAST TWELVE MONTHS**. Where possible, give only **one answer per question** for the type of food you eat **most often** *(if you can't decide which type you have most often, answer for the types you usually eat)*.

Q64 **How many pieces of FRESH fruit do you usually eat per day?**
(Count 1/2 cup diced fruit, berries or grapes as one piece)

- I don't eat fruit ☐
- Less than 1 piece of fruit per day ☐
- 1 piece of fruit per day ☐
- 2 pieces of fruit per day ☐
- 3 pieces of fruit per day ☐
- 4 pieces of fruit per day ☐
- 5 or more pieces of fruit per day ☐

Q65 **How many DIFFERENT vegetables do you usually eat per day?**
(Count all types, fresh, frozen or tinned)

- Less than 1 vegetable per day ☐
- 1 vegetable per day ☐
- 2 vegetables per day ☐
- 3 vegetables per day ☐
- 4 vegetables per day ☐
- 5 vegetables per day ☐
- 6 or more vegetables per day ☐

Q66 **How many SERVES of vegetables do you usually eat each day?**
(A serve = half a cup of cooked vegetables or a cup of salad vegetables)

- None ☐
- 1 serve ☐
- 2-3 serves ☐
- 4 serves ☐
- 5 serves or more ☐

Q67 **What type of milk do you usually use?**

- **a** None ☐
- **b** Full cream milk ☐
- **c** Reduced fat milk ☐
- **d** Skim milk ☐
- **e** Soya milk ☐

Q68 **How much milk do you usually use per day?** *(Include flavoured milk and milk added to tea, coffee, cereal etc)*

- None ☐
- Less than 250ml *(1 large cup or mug)* ☐
- Between 250ml and 500ml *(1-2 cups)* ☐
- Between 500ml and 750ml *(2-3 cups)* ☐
- 750ml *(3 cups)* or more ☐

Q69 **What type of bread do you usually eat?**

- **a** I don't eat bread ☐
- **b** High fibre white bread ☐
- **c** White bread ☐
- **d** Wholemeal bread ☐
- **e** Rye bread ☐
- **f** Multi-grain bread ☐

Q70 **How many slices of bread do you usually eat per day?** *(Include all types, fresh or toasted and count one bread roll as 2 slices)*

- Less than 1 slice per day ☐
- 1 slice per day ☐
- 2 slices per day ☐
- 3 slices per day ☐
- 4 slices per day ☐
- 5-7 slices per day ☐
- 8 or more slices per day ☐

Q71 **Which spread do you usually put on bread?**

- **a** I don't use any fat spread ☐
- **b** Margarine of any kind ☐
- **c** Polyunsaturated margarine ☐
- **d** Monounsaturated margarine ☐
- **e** Butter and margarine blends ☐
- **f** Butter ☐

Q72 **On average, how many eggs do you usually eat per week?**

- I don't eat eggs ☐
- Less than 1 egg per week ☐
- 1 to 2 eggs per week ☐
- 3 to 5 eggs per week ☐
- 6 or more eggs per week ☐

Q73 **What types of cheese do you usually eat?**

- **a** I don't eat cheese ☐
- **b** Hard cheeses eg parmesan, romano ☐
- **c** Firm cheeses eg cheddar, edam ☐
- **d** Soft cheeses eg camembert, brie ☐
- **e** Ricotta or cottage cheese ☐
- **f** Cream cheese ☐
- **g** Low fat cheese ☐

Q74a **Over the LAST 12 MONTHS, on average, how often did you eat the following foods?**

(Mark one on each line)

		Never	Less than once a week	Once a week or more
a	All Bran	☐	☐	☐
b	Sultana Bran™, Fibre Plus™, Branflakes™	☐	☐	☐
c	Weet Bix™, Vita Brits™, Weeties™	☐	☐	☐
d	Cornflakes, Nutrigrain™, Special K™	☐	☐	☐
e	Porridge	☐	☐	☐
f	Muesli	☐	☐	☐
g	Rice	☐	☐	☐
h	Pasta or noodles (*include lasagne*)	☐	☐	☐
i	Nuts	☐	☐	☐
j	Peanut butter or peanut paste	☐	☐	☐
k	Vegemite™, Marmite™, Promite™	☐	☐	☐
l	Tinned or frozen fruit (*any kind*)	☐	☐	☐
m	Oranges or other citrus fruit	☐	☐	☐
n	Apples	☐	☐	☐
o	Pears	☐	☐	☐
p	Bananas	☐	☐	☐
q	Watermelon, rockmelon, honey dew etc	☐	☐	☐
r	Pineapple	☐	☐	☐
s	Strawberries	☐	☐	☐
t	Apricots	☐	☐	☐
u	Peaches or nectarines	☐	☐	☐
v	Mango or paw paw	☐	☐	☐
w	Avocado	☐	☐	☐
x	Fruit or vegetable juice	☐	☐	☐
y	Potatoes cooked without fat	☐	☐	☐
z	Tomato sauce, tomato paste or dried tomatoes	☐	☐	☐
aa	Fresh or tinned tomatoes	☐	☐	☐
bb	Peppers (capsicum)	☐	☐	☐
cc	Lettuce, endive or other salad greens	☐	☐	☐
dd	Cucumber	☐	☐	☐
ee	Celery	☐	☐	☐
ff	Beetroot	☐	☐	☐
gg	Carrots	☐	☐	☐
hh	Cabbage or brussels sprouts	☐	☐	☐
ii	Cauliflower	☐	☐	☐
jj	Broccoli	☐	☐	☐
kk	Silverbeet or spinach	☐	☐	☐
ll	Peas	☐	☐	☐
mm	Green beans	☐	☐	☐

		Never	Less than once a week	Once a week or more
nn	Bean sprouts or alfalfa sprouts	☐	☐	☐
oo	Baked beans	☐	☐	☐
pp	Soya beans, soy bean curd or tofu	☐	☐	☐
qq	Other beans (*include chick peas, lentils etc*)	☐	☐	☐
rr	Pumpkin	☐	☐	☐
ss	Onions or leeks	☐	☐	☐
tt	Garlic (*not garlic tablets*)	☐	☐	☐
uu	Mushrooms	☐	☐	☐
vv	Zucchini	☐	☐	☐

Q74b **Over the LAST 12 MONTHS, on average, how often did you eat the following foods?**
(Mark one on each line)

		Never	Less than once a week	Once a week	2-4 times per week	5 or more times per week
a	Cheese	☐	☐	☐	☐	☐
b	Ice cream	☐	☐	☐	☐	☐
c	Yoghurt	☐	☐	☐	☐	☐
d	Beef	☐	☐	☐	☐	☐
e	Veal	☐	☐	☐	☐	☐
f	Chicken	☐	☐	☐	☐	☐
g	Lamb	☐	☐	☐	☐	☐
h	Pork	☐	☐	☐	☐	☐
i	Fish, steamed, grilled or baked	☐	☐	☐	☐	☐
j	Fish, tinned (*salmon, tuna, sardines etc*)	☐	☐	☐	☐	☐

Q75 **How often do you currently smoke cigarettes or any tobacco products?**
(Mark one only)

Daily ☐ → Go to Q76
At least weekly (but not daily) ☐ → Go to Q77
Less often than weekly ☐
Not at all ☐ → Go to Q78

Q76 **If you smoke daily, on average how many cigarettes do you smoke EACH DAY?**
PRINT the number in the box

☐☐☐ cigarettes per day → Go to Q80

Q77 **If you smoke, but not daily, on average how many cigarettes do you smoke PER WEEK?**
PRINT the number in the box

☐☐☐ cigarettes per week

Q78 **Have you ever smoked DAILY?**
(Mark one only)

Yes ☐
No ☐ → If No, go to Q80

Q79 **At what age did you finally stop smoking DAILY?**
PRINT age in the box

☐☐ years old

Think about all of the time you spend sitting during EACH DAY while at home, at work, while getting from place to place or during your spare time.

Q80 **How many hours EACH DAY do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television or working at a desk or computer?**

a On a usual **WEEK DAY** ☐☐ hours

b On a usual **WEEKEND DAY** ☐☐ hours

The next two questions are about the amount of physical activity you did LAST WEEK.

Q81 **How many *times* did you do each type of activity LAST WEEK?**
*Only count the number of times when the activity lasted for 10 minutes or more. (If you did **not** do an activity, please write "0" in the box)*

a **Walking briskly** *(for recreation or exercise, or to get from place to place)* ☐☐ times

b **Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)* ☐☐ times

c **Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)* ☐☐ times

d **Vigorous household or garden chores** *(that make you breathe harder or puff and pant)* ☐☐ times

Q82 **If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity?**
*(If you did **not** do an activity, please write "0" in the box)*

a **Walking briskly** *(for recreation or exercise, or to get from place to place)* ☐☐ hours ☐☐ minutes

b **Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)* ☐☐ hours ☐☐ minutes

c **Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)* ☐☐ hours ☐☐ minutes

d **Vigorous household or garden chores** *(that make you breathe harder or puff and pant)* ☐☐ hours ☐☐ minutes

Q83 **This question asks about your physical activity in your MAIN job (this could be paid work, unpaid work, caring etc - whatever you spend most of your "working day" doing). On a usual working day, how often do you do each of the following while you are at work?** *(Mark one on each line)*

		All of the time	Most of the time	Some of the time	A little of the time	None of the time
a	Sitting	☐	☐	☐	☐	☐
b	Standing	☐	☐	☐	☐	☐
c	Walking	☐	☐	☐	☐	☐
d	Heavy labour or physically demanding work	☐	☐	☐	☐	☐

Q84 **What is your date of birth?**

☐☐ Day ☐☐ Month 19 ☐☐ Year

Q85 **In a USUAL WEEK, how much time in total do you spend doing the following things?**
(Mark one on each line)

		I don't do this activity	1-15 hours	16-24 hours	25-34 hours	35-40 hours	41-48 hours	49 hours or more
a	Full time paid work	☐	☐	☐	☐	☐	☐	☐
b	Part-time paid work	☐	☐	☐	☐	☐	☐	☐
c	Casual paid work	☐	☐	☐	☐	☐	☐	☐
d	Home duties *(own / family home)*	☐	☐	☐	☐	☐	☐	☐
e	Work without pay *(eg family business)*	☐	☐	☐	☐	☐	☐	☐
f	Looking for work	☐	☐	☐	☐	☐	☐	☐
g	Unpaid voluntary work	☐	☐	☐	☐	☐	☐	☐
h	Active leisure *(eg walking, exercise, sport)*	☐	☐	☐	☐	☐	☐	☐
i	Passive leisure *(eg TV, music, reading, relaxing)*	☐	☐	☐	☐	☐	☐	☐
j	Studying	☐	☐	☐	☐	☐	☐	☐

Q86 **Managing time is often difficult. How often do you feel:**
(Mark one on each line)

		Every day	A few times a week	About once a week	About once a month	Never
a	That you are rushed, pressured, too busy?	☐	☐	☐	☐	☐
b	That you have time on your hands that you don't know what to with?	☐	☐	☐	☐	☐

Q87 **Are you happy with your share of the following tasks and activities?**
(Mark one on each line)

		Happy the way it is	Would like other household members to do more	Would prefer another arrangement	Not applicable (don't do this)
a	Domestic work *(shopping, cooking, cleaning etc)*	☐	☐	☐	☐
b	Childcare	☐	☐	☐	☐
c	Caring for another adult *(who is elderly / disabled / sick)*	☐	☐	☐	☐
d	Other household work *(gardening, home / car maintenance)*	☐	☐	☐	☐

Q88 **Do you regularly provide (unpaid) care for grandchildren or other people's children?**
(Mark one only)

- ☐ Yes, daily
- ☐ Yes, weekly
- ☐ Yes, occasionally
- ☐ No, never

Q89 **Do you regularly provide care or assistance *(eg personal care, transport)* to any other person because of their long-term illness, disability or frailty?**
(Mark one on each line)

		Yes	No	
a	For someone who lives with you	☐	☐	If No to both, go to Q93
b	For someone who lives elsewhere	☐	☐	

Q90 **How many people with long-term illness, disability or frailty do you regularly provide care for?**
(Mark one only)

- ☐ One person
- ☐ Two people
- ☐ More than two people

Q91 **How often in total do you provide this care or assistance?**
(Mark one only)

- ☐ Every day
- ☐ Several times a week
- ☐ Once a week
- ☐ Once every few weeks
- ☐ Less often

Q92 **How much time do you usually spend providing such care or assistance on each occasion?**
(Mark one only)

- ☐ All day and night
- ☐ All day
- ☐ All night
- ☐ Several hours
- ☐ About an hour

women's health *is about the kinds of work you do and your plans for the future*

Q93 **Do you normally do any of the following kinds of paid work?**
(Mark all that apply)

		Yes
a	Paid shift work	☐
b	Paid work at night	☐
c	Paid work from home	☐
d	Self employment	☐
e	Paid work in more than one job	☐
f	Casual paid work	☐
g	Paid work involving none of the above	☐
h	I don't do any paid work	☐

Q94 **We would like to know YOUR and YOUR PARTNER'S main occupation NOW:**
(Mark one in each column)

	A self	B partner
Manager or administrator *(eg magistrate, farm manager, media producer, school principal)*	☐	☐
Professional *(eg registered nurse, allied health professional, teacher, artist)*	☐	☐
Associate professional *(eg office manager, branch manager, shop manager, retail buyer, youth worker, police officer)*	☐	☐
Tradesperson or related worker *(eg cook, dressmaker, hairdresser, gardener, florist)*	☐	☐
Advanced clerical or service worker *(eg credit officer, radio despatcher, personal assistant, flight attendant, law clerk)*	☐	☐
Intermediate clerical, sales or service worker *(eg accounts clerk, checkout supervisor, data entry operator, child care worker, nursing assistant, hospitality worker)*	☐	☐
Intermediate production or transport worker *(eg machine operator, bus driver)*	☐	☐
Elementary clerical, sales or service worker *(eg filing / mail clerk, parking inspector, sales assistant, telemarketer, housekeeper)*	☐	☐
Labourer or related worker *(eg cleaner, factory worker, kitchen hand, fast food cook)*	☐	☐
No paid job	☐	☐
Don't know or **no partner**		☐

Q95 **How do you manage on the income you have available?**
(Mark one only)

- It is impossible ☐
- It is difficult all the time ☐
- It is difficult some of the time ☐
- It is not too bad ☐
- It is easy ☐

Q96 **Are there people who do NOT live with you who are dependent on your household income?**
(Mark one only)

- No ☐
- Yes, one ☐
- Yes, more than one ☐

Q97 **Women's employment patterns have changed a lot over recent years. We are keen to learn how women see retirement in their own lives. Please indicate the following description that best fits your life now. If you want to add more please write this on page 30.**
(Mark one only)

- I am not retired at all ☐
- I am partially retired ☐
- I am completely retired from paid work ☐
- I gave up paid work over 20 years ago ☐
- I have never been in paid work ☐

Q98 **When did you retire or give up work completely?**

(Print year in the box) ☐☐☐☐ Not applicable ☐

Q99 **At what age do you expect to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q100 **You have said when you expect to retire, but if you had the choice, at what age would you like to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q101a **What are your CURRENT sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q101b **When you are OVER 65 what will be your sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q102 **Have you begun to think about your life in retirement? In particular, have you made any plans for the following aspects of your life?**
(Mark one on each line)

		Not at all	Thought about it	Made some plans	Have firm plans
a	To be socially active with friends or family or the community	☐	☐	☐	☐
b	To be mentally active *(eg join a group, do word or number puzzles)*	☐	☐	☐	☐
c	To be physically active	☐	☐	☐	☐
d	To be financially secure	☐	☐	☐	☐
e	To be in some kind of paid, unpaid or voluntary work	☐	☐	☐	☐
f	To be in housing that meets your needs	☐	☐	☐	☐

Q103 **When you are 65 how do you expect to manage on your available income?**
(Mark one only)

- It will be impossible ☐
- It will be difficult all of the time ☐
- It will be difficult some of the time ☐
- It will not be too bad ☐
- It will be easy ☐

Q104 **These questions are about getting on with other people:**
(Mark one on each line)

		Yes	No
a	Are you sad or lonely often?	☐	☐
b	Do you feel uncomfortable with anyone in your family?	☐	☐
c	Can you take your own medication and get around by yourself?	☐	☐
d	Do you feel that nobody wants you around?	☐	☐
e	Does someone in your family make you stay in bed or tell you you're sick when you know you are not?	☐	☐
f	Has anyone forced you to do things you didn't want to do?	☐	☐
g	Has anyone taken things that belong to you without your OK?	☐	☐
h	Do you trust most of the people in your family?	☐	☐
i	Do you have enough privacy at home?	☐	☐
j	Has anyone close to you tried to hurt or harm you recently?	☐	☐
k	Has anyone close to you called you names or put you down or made you feel bad recently?	☐	☐
l	Are you afraid of anyone in your family?	☐	☐
m	Does anyone in your family drink a lot of alcohol?	☐	☐
n	Have you ever been in a violent relationship with a partner / spouse?	☐	☐

Q105 **If you have ever lived with a violent partner or spouse, in which years did you experience violence?**
(Mark all that apply)

a	I have never lived with a violent partner or spouse	☐
b	Before 1996	☐
c	1996-1998	☐
d	1999-2001	☐
e	2002-2004	☐
f	2005-now	☐

Q106 **What is your present marital status?**
(Mark one only)

- Married *(registered)* ☐
- De facto relationship *(opposite sex)* ☐
- De facto relationship *(same sex)* ☐
- Separated ☐
- Divorced ☐
- Widowed ☐
- Never married ☐

■

Q107 **How many people live with you now?**
(Mark all that apply)

a	No one, I live alone	☐		
		One	**Two**	**Three or more**
b	Partner or spouse	☐		
c	Children under 16 years	☐	☐	☐
d	Children 16-18 years	☐	☐	☐
e	Children over 18 years	☐	☐	☐
f	Your parents or in-laws	☐	☐	☐
g	Other adult relatives	☐	☐	☐
h	Other adults *(not family members)*	☐	☐	☐

Q108 **People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it?**
(Mark one on each line)

		None of the time	**A little of the time**	**Some of the time**	**Most of the time**	**All of the time**
a	Someone to help you if you are confined to bed	☐	☐	☐	☐	☐
b	Someone you can count on to listen to you when you need to talk	☐	☐	☐	☐	☐
c	Someone to give you good advice about a crisis	☐	☐	☐	☐	☐
d	Someone to take you to the doctor if you need it	☐	☐	☐	☐	☐
e	Someone who shows you love and affection	☐	☐	☐	☐	☐
f	Someone to have a good time with	☐	☐	☐	☐	☐
g	Someone to give you information to help you understand a situation	☐	☐	☐	☐	☐
h	Someone to confide in or talk to about yourself or your problems	☐	☐	☐	☐	☐
i	Someone who hugs you	☐	☐	☐	☐	☐
j	Someone to get together with for relaxation	☐	☐	☐	☐	☐
k	Someone to prepare your meals if you are unable to do it yourself	☐	☐	☐	☐	☐
l	Someone whose advice you really want	☐	☐	☐	☐	☐
m	Someone to do things with to help you get your mind off things	☐	☐	☐	☐	☐
n	Someone to help with daily chores if you are sick	☐	☐	☐	☐	☐
o	Someone to share your most private worries and fears with	☐	☐	☐	☐	☐
p	Someone to turn to for suggestions about how to deal with a personal problem	☐	☐	☐	☐	☐
q	Someone to do something enjoyable with	☐	☐	☐	☐	☐
r	Someone who understands your problems	☐	☐	☐	☐	☐
s	Someone to love and make you feel wanted	☐	☐	☐	☐	☐

Q109 **Are you a twin?**
(Mark one only)

- Yes - identical ☐
- Yes - not identical *(fraternal)* ☐
- No ☐

Q110 **In general, are you satisfied with what you have achieved in your life so far in the areas of:**
(Mark one on each line)

		Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
a	Work	☐	☐	☐	☐
b	Career	☐	☐	☐	☐
c	Study	☐	☐	☐	☐
d	Family relationships	☐	☐	☐	☐
e	Partner / closest personal relationship	☐	☐	☐	☐
f	Friendships	☐	☐	☐	☐
g	Social activities	☐	☐	☐	☐

If you filled in this survey for the participant, please answer the next three questions.

Q111 **Your relationship to participant:** *(Mark one only)*

- Family member ☐
- Professional health worker *(eg nurse)* ☐
- Other *(eg friend)* ☐

Q112 **When you filled in this survey for the participant, which of the following applied?**
(Mark one only)

- The participant told me what answers she wanted ☐
- The participant was unable to tell me what answers she wanted and I used my own judgement ☐

Q113 **What was the MAIN reason why the participant did not fill in the survey herself?**
(Please describe)

Have we missed anything?

If there is ANYTHING else you would like to tell us about changes in your health (especially in the last three years) please write on the lines below.

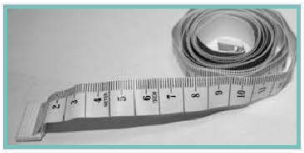
Consent

Mid 5 2007

I consent to the researchers 'matching' the information provided in this survey with that provided in previous surveys so that any changes in my health can be noted.

Signature: _____ Date: _____

What is your maiden name? _____



Have you remembered to measure your waist?
Page 17 Question 56

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Help us keep in touch!

Sometimes we lose touch with our participants. It would be helpful if you could give us your mobile phone number and email address.

Mobile

Email

It would also be helpful if you could give us details of a relative or friend who will be able to help us find you.

Name

Address

P'Code

Phone (home) ( )

Relationship to you

Name

Address

P'Code

Phone (home) ( )

Relationship to you

Thank you for taking the time to complete this survey.

If you have any questions you can contact us by telephoning

1800 068 081 (freecall).

Don't forget to sign the consent and post this back to us!

women's health australia

Fifth survey for mid - age women March 2007

Australian Longitudinal Study on Women's Health
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Appendix 2 Australian Longitudinal Study on Women's Health sixth survey of the mid-age cohort women (Survey 6)

How to complete this survey

This is the sixth "main" survey for women in your age group.
As the purpose of the project is to look at changes over time, some of the questions are the same as those in previous surveys.

Please answer every question you can. If you are unsure about how to answer a question, mark the response for the closest answer to how you feel.

Please write any comments or important information on page 30. We are not able to read comments written elsewhere throughout the survey.

Please read the instructions above each question carefully. Some require you to only answer those options which are applicable to you. Other questions require you to mark one answer on each line. The questions may also refer to different time periods.

INSTRUCTIONS:

- **Use a black or blue biro**
- **Do not fold or bend this survey**

Cross the boxes like this:

In general, would you say your health is: (*Mark one only*)

Excellent	☐
Very good	☐
Good	☒ ← You would mark this one if you think your health is good
Fair	☐
Poor	☐

Print clearly in the boxes like this:

What is your postcode?
(PRINT clearly in the boxes)

2	3	0	8

Correct mistakes like this:

When you go to a General Practitioner:
(Mark one on each line)
Do you go to the same place?

	Always	Most of the time	Some-times	Rarely or never
	☐	☒	■	☐

If you make a mistake simply scribble it out and clearly mark the correct answer with a cross.

If you need help to answer any questions, please ring 1800 068 081
(This is a FREECALL number)

** If you are concerned about any of your health experiences and would like some help, you may like to contact:*

- *your nearest Women's Health Centre or Community Health Centre;*
- *your General Practitioner for advice about who would be the best person in your community for you to talk to.*

** If you feel distressed NOW and would like someone to talk to, you could ring Lifeline on 131 114 (local call).*

Note: No commercial gain or sponsorship is provided to WHA for the inclusion of brand names in the survey.

women's health is about how you are feeling

The questions on the first page ask only about NOW - how your health is NOW and about how your health limits certain activities NOW.

Q1 **In general, would you say your health is:**
(Mark one only)

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

Q2 **Compared to one year ago, how would you rate your health in general now?**
(Mark one only)

- ☐ Much better now than one year ago
- ☐ Somewhat better now than one year ago
- ☐ About the same now as one year ago
- ☐ Somewhat worse now than one year ago
- ☐ Much worse now than one year ago

Q3 **The following questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?**
(Mark one on each line)

		Yes, limited a lot	Yes, limited a little	No, not limited at all
a	VIGOROUS activities, such as running, lifting heavy objects, participating in strenuous sports	☐	☐	☐
b	MODERATE activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	☐	☐	☐
c	Lifting or carrying groceries	☐	☐	☐
d	Climbing SEVERAL flights of stairs	☐	☐	☐
e	Climbing ONE flight of stairs	☐	☐	☐
f	Bending, kneeling or stooping	☐	☐	☐
g	Walking MORE THAN ONE kilometre	☐	☐	☐
h	Walking HALF a kilometre	☐	☐	☐
i	Walking 100 metres	☐	☐	☐
j	Bathing or dressing yourself	☐	☐	☐

The questions on this page and the next one ask about your health IN THE LAST FOUR WEEKS.

Q4 **During the PAST FOUR WEEKS, have you had any of the following problems with your work *(including your work outside the home and housework)* or other regular daily activities AS A RESULT OF YOUR PHYSICAL HEALTH?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Were limited in the kind of work or other activities	☐	☐
d	Had difficulty performing the work or other activities *(eg it took extra effort)*	☐	☐

Q5 **During the PAST FOUR WEEKS, have you had any of the following problems with your work or other regular daily activities AS A RESULT OF ANY EMOTIONAL PROBLEMS *(such as feeling depressed or anxious)*?**

(Mark one on each line)

		Yes	No
a	Cut down on the amount of time you spent on work or other activities	☐	☐
b	Accomplished less than you would like	☐	☐
c	Didn't do work or other activities as carefully as usual	☐	☐

Q6 **During the PAST FOUR WEEKS, to what extent have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your normal social activities with family, friends, neighbours or groups?**

(Mark one only)

- ☐ Not at all
- ☐ Slightly
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

Q7 **How much BODILY pain have you had during the PAST FOUR WEEKS?**

(Mark one only)

- ☐ No bodily pain
- ☐ Very mild
- ☐ Mild
- ☐ Moderate
- ☐ Severe
- ☐ Very severe

Q8 **During the PAST FOUR WEEKS, how much did PAIN interfere with your normal work *(including both work outside the home and housework)*?**

(Mark one only)

- ☐ Not at all
- ☐ A little bit
- ☐ Moderately
- ☐ Quite a bit
- ☐ Extremely

Q9 **For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST FOUR WEEKS:**

(Mark one on each line)

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a	Did you feel full of life?	☐	☐	☐	☐	☐	☐
b	Have you been a very nervous person?	☐	☐	☐	☐	☐	☐
c	Have you felt so down in the dumps that nothing could cheer you up?	☐	☐	☐	☐	☐	☐
d	Have you felt calm and peaceful?	☐	☐	☐	☐	☐	☐
e	Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
f	Have you felt down?	☐	☐	☐	☐	☐	☐
g	Did you feel worn out?	☐	☐	☐	☐	☐	☐
h	Have you been a happy person?	☐	☐	☐	☐	☐	☐
i	Did you feel tired?	☐	☐	☐	☐	☐	☐

Q10 **During the PAST FOUR WEEKS, how much of the time have your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities *(like visiting friends, relatives, etc)*?**

(Mark one only)

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

Q11 **How TRUE or FALSE is EACH of the following statements for you?**

(Mark one on each line)

		Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a	I seem to get sick a little easier than other people	☐	☐	☐	☐	☐
b	I am as healthy as anybody I know	☐	☐	☐	☐	☐
c	I expect my health to get worse	☐	☐	☐	☐	☐
d	My health is excellent	☐	☐	☐	☐	☐

women's health is about using health services

Q12 **How many times have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		None	Once or twice	3 or 4 times	5 or 6 times	7-12 times	13-24 times	25 or more times
a	A family doctor or another General Practitioner (GP)	☐	☐	☐	☐	☐	☐	☐
b	A hospital doctor *(eg in outpatients or casualty)*	☐	☐	☐	☐	☐	☐	☐
c	A specialist doctor	☐	☐	☐	☐	☐	☐	☐

Q13 **Have you consulted the following people for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		Yes	No
a	Physiotherapist	☐	☐
b	Counsellor / Psychologist / Social worker	☐	☐
c	A community nurse, practice nurse, or nurse practitioner	☐	☐
d	Optician / Optometrist	☐	☐
e	Hearing specialist	☐	☐
f	Dietitian	☐	☐
g	Podiatrist	☐	☐
h	Massage therapist	☐	☐
i	Naturopath / Herbalist	☐	☐
j	Chiropractor	☐	☐
k	Osteopath	☐	☐
l	Acupuncturist	☐	☐
m	Other alternative health practitioner *(eg aromatherapist, homeopath, reflexologist, iridologist)*	☐	☐

Q14 **How often have you used the following therapies for YOUR OWN HEALTH in the LAST TWELVE MONTHS?**
(Mark one on each line)

		Never	Rarely	Sometimes	Often
a	Vitamins / Minerals	☐	☐	☐	☐
b	Yoga or meditation	☐	☐	☐	☐
c	Herbal medicines	☐	☐	☐	☐
d	Aromatherapy oils	☐	☐	☐	☐
e	Chinese medicines	☐	☐	☐	☐
f	Prayer or spiritual healing	☐	☐	☐	☐
g	Other alternative therapies	☐	☐	☐	☐

Q15 **When you go to a General Practitioner:**
(Mark one on each line)

		Always	Most of the time	Some-times	Rarely or never
a	Do you go to the same place?	☐	☐	☐	☐
b	Do you usually see the same doctor?	☐	☐	☐	☐

Q16 **How would you rate the cost to you of your LAST visit to a General Practitioner?**
(Mark one only)

- ☐ No cost to me
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Don't know

Q17 **Do you have a Health Care Card?**
This is a card that entitles you to discounts and assistance with medical expenses.
This is not the same as a Medicare card.
(Mark one only)

- ☐ Yes
- ☐ No

Q18a **Do you have private health insurance for HOSPITAL COVER?**
(Mark one only)

- ☐ Yes
- ☐ No – I am covered by Veterans' Affairs
- ☐ No – because I can't afford the cost
- ☐ No – because I don't think you get value for money
- ☐ No – because I don't think I need it
- ☐ No – other reason

Q18b **Do you have private health insurance for ANCILLARY services (eg dental, physiotherapy)?**
(Mark one only)

- ☐ Yes
- ☐ No – I am covered by Veterans' Affairs
- ☐ No – because I can't afford the cost
- ☐ No – because I don't think you get value for money
- ☐ No – because I don't think I need it
- ☐ No - because the services are not available where I live
- ☐ No – other reason

Q19 **Have you been admitted to hospital in the LAST TWELVE MONTHS?**
(Mark one only)

- ☐ No
- ☐ Yes, day only
- ☐ Yes, spent at least one night

Q20 **When did you last have:**
(Mark one on each line)

		In the last 2 years	2-5 years ago	More than 5 years ago	Never	Don't know
a	A Pap test?	☐	☐	☐	☐	☐
b	A mammogram?	☐	☐	☐	☐	☐

Q21 **Have you EVER had an abnormal result from:** *(Mark one on each line)*

		Yes	No	Don't know
a	A Pap test?	☐	☐	☐
b	A mammogram?	☐	☐	☐

Q22 **In the PAST THREE YEARS, have you:** *(Mark all that apply on each line)*

		Doctor	Nurse	Other	Not checked
a	Had your blood pressure checked?	☐	☐	☐	☐
b	Had your cholesterol checked?	☐	☐	☐	☐
c	Had your blood sugar level checked?	☐	☐	☐	☐
d	Had your skin checked *(eg spots, lesions, moles)*?	☐	☐	☐	☐

Q23 **In the PAST THREE YEARS, have you:** *(Mark one on each line)*

		Yes	No
a	Had your breasts examined by a doctor or nurse?	☐	☐
b	Carried out *regular monthly* breast self examination?	☐	☐
c	Had a bone density test?	☐	☐
d	Had a test for bowel cancer?	☐	☐
e	Had a reminder from your general practice to have a screening test *(eg blood pressure, cholesterol, blood sugar, skin)*?	☐	☐

Q24 **In the PAST THREE YEARS, have you received advice / information about lifestyle changes from any of these sources?** *(Mark one on each line)*

		Yes	No
a	A doctor	☐	☐
b	A nurse	☐	☐
c	Other health professional *(eg physiotherapist, naturopath)*	☐	☐
d	Program or organisation *(eg weight loss program, gym, self help group)*	☐	☐
e	Books, magazines	☐	☐
f	The internet	☐	☐
g	Television	☐	☐
h	Radio	☐	☐
i	Family or friends	☐	☐
j	Private health fund	☐	☐

Q25 **Are you CURRENTLY taking:** *(Mark one on each line)*

		Yes	No
a	The oral contraceptive pill?	☐	☐
b	Hormone Replacement Therapy (HRT)?	☐	☐

Q26 **Have you:** *(Mark one on each line)*

		Yes	No	
a	Had a hysterectomy?	☐ ← If Yes, go to Q29	☐	
b	Had a period or menstrual bleeding in the last 12 months?	☐	☐	← If No, go to Q28
c	Had a period or menstrual bleeding in the last 3 months?	☐	☐	

Q27 **Compared with twelve months ago, are your periods:** *(Mark one only)*

- Less frequent ☐
- About the same ☐
- More frequent ☐
- Changeable ☐

Q28 **If you have reached menopause, at what age did your periods completely stop?**

(Please write the age in the box) ☐☐ years Not applicable ☐

Q29 **Have you ever had Gestational Diabetes (diabetes during pregnancy)?**
(Mark one only)

- ☐ Yes
- ☐ No

Q30 **Thinking about your own health care, how would you rate the following?**
(Mark one on each line)

		Excellent	Very good	Good	Fair	Poor	Don't know
a	Access to medical specialists if you need them	☐	☐	☐	☐	☐	☐
b	Access to a hospital if you need it	☐	☐	☐	☐	☐	☐
c	Access to medical care in an emergency	☐	☐	☐	☐	☐	☐
d	Access to after-hours medical care	☐	☐	☐	☐	☐	☐
e	Access to a GP who bulk bills	☐	☐	☐	☐	☐	☐
f	Access to a female GP	☐	☐	☐	☐	☐	☐
g	Hours when a GP is available	☐	☐	☐	☐	☐	☐
h	Number of GPs you have to choose from	☐	☐	☐	☐	☐	☐
i	Ease of seeing the GP of your choice	☐	☐	☐	☐	☐	☐
j	How long you wait to get a GP appointment	☐	☐	☐	☐	☐	☐
k	The outcomes of your medical care *(how much you are helped)*	☐	☐	☐	☐	☐	☐
l	Ease of obtaining a mammogram	☐	☐	☐	☐	☐	☐
m	Ease of obtaining a Pap test	☐	☐	☐	☐	☐	☐
n	Access to a counselling service if you need it	☐	☐	☐	☐	☐	☐

Q31 **In the LAST TWELVE MONTHS have you consulted a dentist?** *(Mark one only)*

- ☐ No, I did not need to see a dentist
- ☐ No, because there was no dentist available locally
- ☐ No, I could not get there because of travel difficulties
- ☐ No, because it would cost more than I could afford
- ☐ No, I did not go to the dentist because of another reason
- ☐ Yes, I saw a dentist

Q32 **How would you rate the overall condition of your teeth, dentures or gums?**
(Mark one only)

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

Q33 **There are 16 teeth, including wisdom teeth, in the upper jaw. How many teeth do you have remaining in your UPPER jaw?**

(Please write number in boxes) ☐☐

Q34 **There are 16 teeth, including wisdom teeth, in the lower jaw. How many teeth do you have remaining in your LOWER jaw?**

(Please write number in boxes) ☐☐

Q35 **Do you wear a denture or false teeth in your upper jaw?** *(Mark one only)*

Yes ☐
No ☐

Q36 **Do you wear a denture or false teeth in your lower jaw?** *(Mark one only)*

Yes ☐
No ☐

Q37 **In the LAST TWELVE MONTHS have you:** *(Mark all that apply)*

		Yes
a	Slipped, tripped or stumbled?	☐
b	Had a fall to the ground?	☐
c	Been injured as a result of a fall?	☐
d	Needed to seek medical attention for an injury from a fall?	☐
e	Had any other injury from an accident at your home?	☐
f	Broken or fractured any bone/s?	☐
g	None of the above	☐

Q38 **In the PAST THREE YEARS, have you been diagnosed or treated for:** *(Mark all that apply)*

		Yes, in the past 3 years
a	Diabetes *(high blood sugar)*	☐
b	Impaired glucose tolerance	☐
c	Osteoarthritis	☐
d	Rheumatoid arthritis	☐
e	Other arthritis	☐
f	Heart disease *(including heart attack, angina)*	☐
g	Thrombosis *(a blood clot)*	☐
h	Hypertension *(high blood pressure)*	☐
i	Stroke	☐
j	Low iron level *(iron deficiency or anaemia)*	☐
k	Asthma	☐
l	Bronchitis / emphysema	☐
m	Osteoporosis	☐
n	Breast cancer	☐
o	Cervical cancer	☐
p	Skin cancer *(including melanoma)*	☐
q	Other cancer *(please specify on page 30)*	☐
r	Depression	☐
s	Anxiety / nervous disorder	☐
t	Other psychiatric disorder	☐
u	Chronic Fatigue Syndrome	☐
v	Sexually transmitted infection *(eg genital herpes or warts, chlamydia)*	☐
w	Other major illness or disability *(please specify on page 30)*	☐
x	None of these conditions	☐

Q39 **Compared to when you were in your twenties, how good are you at:**

(Mark one on each line)

		Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now
a	Remembering the name of a person just introduced to you?	☐	☐	☐	☐	☐
b	Recalling telephone numbers or other numbers that you use on a daily or weekly basis?	☐	☐	☐	☐	☐
c	Recalling where you put objects *(such as keys)* in your home?	☐	☐	☐	☐	☐
d	Remembering specific facts from a newspaper or magazine article you have just finished reading?	☐	☐	☐	☐	☐
e	Remembering the item(s) you intend to buy when you arrive at the shops?	☐	☐	☐	☐	☐
f	In general, how would you describe your memory compared to when you were in your twenties?	☐	☐	☐	☐	☐

Q40 **In the PAST THREE YEARS, have you had any of the following operations or procedures?**

(Mark all that apply)

		Yes, in the past 3 years
a	Both ovaries removed	☐
b	Repair of prolapsed vagina, bladder or bowel	☐
c	Endometrial ablation *(removal of the lining of the uterus)*	☐
d	Joint replacement *(eg hip, knee)*	☐
e	Mastectomy *(removal of one or both breasts)*	☐
f	Lumpectomy *(removal of lump from breast)*	☐
g	Removal of skin cancer	☐
h	Any cancer surgery *(other than skin or breast)*	☐
i	Chemotherapy or radiotherapy for any cancer	☐
j	Breast biopsy *(taking a sample of breast tissue)*	☐
k	Hysteroscopy *(investigative procedure to examine the uterus)*	☐
l	Cholecystectomy *(gall bladder removed)*	☐
m	Gastroscopy / colonoscopy	☐
n	None of these	☐

Q41 **Do you have any of these sleeping problems?**
(Mark all that apply)

		Yes
a	Waking up in the early hours of the morning	☐
b	Lying awake for most of the night	☐
c	Taking a long time to get to sleep	☐
d	Worry keeping you awake at night	☐
e	Sleeping badly at night	☐
f	None of these problems	☐

Q42 **In the PAST FOUR WEEKS, have you taken any:**
(Mark one on each line)

		Yes	No	
a	Medications prescribed by a doctor?	☐	☐	If No to both, go to Q44
b	Medications / vitamins / supplements or herbal therapies bought without a prescription at the chemist, supermarket or health food shop?	☐	☐	

Q43 **Please write down the names of all your medications, vitamins, supplements or herbal therapies taken in the PAST FOUR WEEKS. Where possible, copy names from the packets.**
(Please write in block letters)

a		i	
b		j	
c		k	
d		l	
e		m	
f		n	
g		o	
h		p	

Q44 **In the PAST WEEK, have you been feeling that life isn't worth living?** *(Mark one only)*

Yes ☐
No ☐

Q45 **In the PAST 6 MONTHS, have you EVER deliberately hurt yourself or done anything that you knew might have harmed or even killed you?** *(Mark one only)*

Yes ☐
No ☐

If you answered YES to either of the last 2 questions, you might like to talk to someone about how you are feeling. You could ring Lifeline on 131114 (local call).

Q46 **In the LAST 12 MONTHS, have you had any of the following:**
(Mark <u>one on each line</u> in column A.
For <u>all that apply</u> also answer column B.)

		A				B
		Never	Rarely	Some-times	Often	For the problems you had, DID you seek help? Mark here if you DID seek help
a	Allergies, hay fever, sinusitis	☐	☐	☐	☐	☐
b	Breathing difficulty	☐	☐	☐	☐	☐
c	Indigestion / heartburn	☐	☐	☐	☐	☐
d	Chest pain	☐	☐	☐	☐	☐
e	Headaches / migraines	☐	☐	☐	☐	☐
f	Severe tiredness	☐	☐	☐	☐	☐
g	Stiff or painful joints	☐	☐	☐	☐	☐
h	Back pain	☐	☐	☐	☐	☐
i	Urine that burns or stings	☐	☐	☐	☐	☐
j	Haemorrhoids *(piles)*	☐	☐	☐	☐	☐
k	Other bowel problems	☐	☐	☐	☐	☐
l	Vaginal discharge or irritation	☐	☐	☐	☐	☐
m	Hot flushes	☐	☐	☐	☐	☐
n	Night sweats	☐	☐	☐	☐	☐
o	Eyesight problems	☐	☐	☐	☐	☐
p	Leaking urine	☐	☐	☐	☐	☐
q	Mouth, teeth or gum problems	☐	☐	☐	☐	☐
r	Avoided eating some foods because of problems with your teeth, mouth or dentures	☐	☐	☐	☐	☐
s	Toothache	☐	☐	☐	☐	☐
t	Hearing problems	☐	☐	☐	☐	☐
u	Depression	☐	☐	☐	☐	☐
v	Anxiety	☐	☐	☐	☐	☐
w	Episodes of intense anxiety *(eg panic attacks)*	☐	☐	☐	☐	☐
x	Palpitations *(feeling that your heart is racing or fluttering in your chest)*	☐	☐	☐	☐	☐
y	Poor memory	☐	☐	☐	☐	☐
z	Dizziness, loss of balance	☐	☐	☐	☐	☐
aa	Difficulty concentrating	☐	☐	☐	☐	☐

women's health *is about coping with stress*

Q47 **Over the LAST TWELVE MONTHS, how stressed have you felt about the following areas of your life:** *(Mark one on each line)*

		Not applicable	Not at all stressed	Somewhat stressed	Moderately stressed	Very stressed	Extremely stressed
a	Own health		☐	☐	☐	☐	☐
b	Health of family members	☐	☐	☐	☐	☐	☐
c	Work / employment	☐	☐	☐	☐	☐	☐
d	Living arrangements		☐	☐	☐	☐	☐
e	Study	☐	☐	☐	☐	☐	☐
f	Money		☐	☐	☐	☐	☐
g	Relationship with parents	☐	☐	☐	☐	☐	☐
h	Relationship with partner / spouse	☐	☐	☐	☐	☐	☐
i	Relationship with children	☐	☐	☐	☐	☐	☐
j	Relationship with other family members	☐	☐	☐	☐	☐	☐

Q48 **How much do you agree or disagree with each of the following statements?**
(Mark one on each line)

		Disagree strongly	Disagree	Disagree slightly	Agree slightly	Agree	Agree strongly
a	At home, I feel I have control over what happens in most situations	☐	☐	☐	☐	☐	☐
b	I feel that what happens in my life is often determined by factors beyond my control	☐	☐	☐	☐	☐	☐
c	Over the next 5-10 years I expect to have more positive than negative experiences	☐	☐	☐	☐	☐	☐
d	I often have the feeling that I am being treated unfairly	☐	☐	☐	☐	☐	☐
e	In the past 10 years my life has been full of changes without my knowing what will happen next	☐	☐	☐	☐	☐	☐
f	I gave up trying to make big improvements or changes in my life a long time ago	☐	☐	☐	☐	☐	☐

Q49 **Thinking about your current approach to life, please indicate how much you think each statement describes you:**
(Mark one on each line)

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a	In uncertain times, I usually expect the best	☐	☐	☐	☐	☐
b	If something can go wrong for me, it will	☐	☐	☐	☐	☐
c	I'm always optimistic about my future	☐	☐	☐	☐	☐
d	I hardly ever expect things to go my way	☐	☐	☐	☐	☐
e	I rarely count on good things happening to me	☐	☐	☐	☐	☐
f	Overall, I expect more good things to happen to me than bad	☐	☐	☐	☐	☐

Q50 **What is your postcode?**

a	What is your RESIDENTIAL postcode? *(where you live)*	
b	What is the postcode of your POSTAL ADDRESS? *(if different from residential)*	

Q51 **Which of the following events have you experienced?**
(Mark all that apply)

		A Yes, in the last 12 months	B Yes, more than 12 months ago
a	Major personal illness	☐	☐
b	Major personal injury or involvement in a serious accident	☐	☐
c	Major personal achievement	☐	☐
d	Birth of a grandchild	☐	☐
e	Major surgery *(not including dental work)*	☐	☐
f	Going through menopause	☐	☐
g	Major decline in health of spouse or partner	☐	☐
h	Major decline in health of other close family member or close friend	☐	☐
i	Starting a new, close personal relationship	☐	☐
j	Infidelity of spouse or partner	☐	☐
k	Break-up of a close personal relationship	☐	☐
l	Divorce	☐	☐
m	Major conflict with teenage or older children	☐	☐
n	Child or other family member leaving home *(due to marriage, to attend university etc)*	☐	☐
o	Death of spouse or partner	☐	☐
p	Death of a child	☐	☐
q	Death of other close family member	☐	☐
r	Death of close friend	☐	☐
s	Changing your type of work / hours / conditions / responsibilities at work	☐	☐
t	Retirement	☐	☐
u	Your spouse or partner retiring from work	☐	☐
v	Being made redundant	☐	☐
w	Your spouse / partner being made redundant	☐	☐
x	Decreased income	☐	☐
y	Moving house	☐	☐
z	Natural disaster *(fire, flood, drought, earthquake etc)* or house fire	☐	☐
aa	Major loss or damage to personal property	☐	☐
bb	Being robbed	☐	☐
cc	Being pushed, grabbed, shoved, kicked or hit	☐	☐
dd	Being forced to take part in unwanted sexual activity	☐	☐
ee	Legal troubles or involved in a court case	☐	☐
ff	Family member / close friend being arrested / in gaol	☐	☐
gg	You or a family member involved in problem gambling	☐	☐
hh	None of these events	☐	

Q52 **Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way DURING THE LAST WEEK.**
(Mark one on each line)

		Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
a	I was bothered by things that don't usually bother me	☐	☐	☐	☐
b	I had trouble keeping my mind on what I was doing	☐	☐	☐	☐
c	I felt depressed	☐	☐	☐	☐
d	I felt that everything I did was an effort	☐	☐	☐	☐
e	I felt hopeful about the future	☐	☐	☐	☐
f	I felt fearful	☐	☐	☐	☐
g	My sleep was restless	☐	☐	☐	☐
h	I was happy	☐	☐	☐	☐
i	I felt lonely	☐	☐	☐	☐
j	I could not "get going"	☐	☐	☐	☐
k	I felt terrific	☐	☐	☐	☐

Q53 **In the past month:** *(Mark one on each line)*

		Yes	No
a	Have you felt keyed up or on edge?	☐	☐
b	Have you been worrying a lot?	☐	☐
c	Have you been irritable?	☐	☐
d	Have you had difficulty relaxing?	☐	☐
e	Have you been sleeping poorly?	☐	☐
f	Have you had headaches or neck aches?	☐	☐
g	Have you had any of the following: trembling, tingling, dizzy spells, sweating, diarrhoea or needing to pass urine more often than normal?	☐	☐
h	Have you been worried about your health?	☐	☐
i	Have you had difficulty falling asleep?	☐	☐

Q54 **Do you regularly NEED help with daily tasks because of long-term illness, disability or frailty *(eg personal care, getting around, preparing meals etc)*?**
(Mark one only)

Yes ☐
No ☐

The following sections are about other health habits, time use and your relationships.

Often there are no "right" or "wrong" answers – we are interested only in your opinion or feelings.

If you feel uncomfortable about answering a question, just leave it and go on to the next one, but please try to finish the survey if you can.

You may like to take a break now and do the second part later.

women's health is about healthy weight and shape

Q55 **a** **How much do you weigh?** *(no clothes or shoes)*

☐☐☐ **kgs** **OR** ☐☐ **stones** ☐☐ **pounds**

b **How tall are you without shoes?**

☐☐☐ **cms** **OR** ☐ **feet** ☐☐ **inches**

Q56 **What is your waist measurement?**

Please measure your waist while in your underwear. If possible, get someone to help you take the measurement. Find your navel (belly button) and measure at that level. Be careful not to have the tape too tight. You should be able to slip your little finger under it comfortably. Write the measurement to the ***nearest*** *centimetre (or inches if this is the only measure you have available).*

☐☐☐ **cms** **OR** ☐☐ **inches**

Q57 **In the LAST THREE YEARS, have you:**

(Mark one on each line)

		Yes	No
a	Lost 5 kg or more on purpose?	☐	☐
b	Lost 5 kg or more for any other reason?	☐	☐
c	Gained 5 kg or more?	☐	☐

Q58 **Have you used any of these methods to lose weight or to control your weight or shape in the LAST TWELVE MONTHS?**

(Mark one on each line)

		Yes	No
a	Commercial weight loss programs *(eg Weight Watchers®, Lite n' Easy®, Sureslim®, Jenny Craig®)*	☐	☐
b	Meal replacements or slimming products *(eg OPTIFAST®, Herbalife®)*	☐	☐
c	Exercise	☐	☐
d	Cut down on the size of meals or between meal snacks	☐	☐
e	Cut down on fats *(low fat)* and / or sugars	☐	☐
f	Low glycaemic index (GI) diet	☐	☐
g	Diet book diets *(eg Atkins, Zone, CSIRO diet, Liver Cleansing diet)*	☐	☐
h	Laxatives, diuretics or diet pills *(eg Xenical®, Reductil®)*	☐	☐
i	Fasting	☐	☐
j	Smoking	☐	☐

Q59 **Have you ever had gastric banding surgery?** *(Mark one only)*

Yes, in the last 3 years ☐

Yes, more than 3 years ago ☐

Never ☐

Q60 **How often do you usually drink alcohol?**
(Mark one only)

- I have never drunk alcohol in my life ☐
- I never drink alcohol, but I have in the past ☐

Go to Q63

- I drink rarely ☐
- Less than once a week ☐
- On 1 or 2 days a week ☐
- On 3 or 4 days a week ☐
- On 5 or 6 days a week ☐
- Every day ☐

Q61 **On a day when you drink alcohol, how many drinks do you usually have?**
(Mark one only)

- 1 or 2 drinks per day ☐
- 3 or 4 drinks per day ☐
- 5 to 8 drinks per day ☐
- 9 or more drinks per day ☐

Q62 **How often do you have five or more drinks of alcohol on one occasion?**
(Mark one only)

- Never ☐
- Less than once a month ☐
- About once a month ☐
- About once a week ☐
- More than once a week ☐

Q63 **How many glasses / cups of non-alcoholic drinks do you usually have each day *(eg juice, tea, coffee, water, milk etc)*?**
(Mark one only)

- 0 – 2 glasses ☐
- 3 – 5 glasses ☐
- 6 – 8 glasses ☐
- 9 or more glasses ☐

Questions 64 to 74 are modified from the Cancer Council of Victoria Food Frequency Questionnaire and are used with permission.

This section is about your **usual** eating habits over the **LAST TWELVE MONTHS**. Where possible, give only **one answer per question** for the type of food you eat **most often** (if you can't decide which type you have most often, answer for the types you usually eat).

Q64 **How many pieces of FRESH fruit do you usually eat per day?**
(Count ½ cup diced fruit, berries or grapes as one piece)

- I don't eat fruit ☐
- Less than 1 piece of fruit per day ☐
- 1 piece of fruit per day ☐
- 2 pieces of fruit per day ☐
- 3 pieces of fruit per day ☐
- 4 pieces of fruit per day ☐
- 5 or more pieces of fruit per day ☐

Q65 **How many DIFFERENT vegetables do you usually eat per day?**
(Count all types, fresh, frozen or tinned)

- Less than 1 vegetable per day ☐
- 1 vegetable per day ☐
- 2 vegetables per day ☐
- 3 vegetables per day ☐
- 4 vegetables per day ☐
- 5 vegetables per day ☐
- 6 or more vegetables per day ☐

Q66 **How many SERVES of vegetables do you usually eat each day?**
(A serve = half a cup of cooked vegetables or a cup of salad vegetables)

- None ☐
- 1 serve ☐
- 2 serves ☐
- 3 serves ☐
- 4 serves ☐
- 5 serves or more ☐

Q67 **What type of milk do you usually use?**

- **a** None ☐
- **b** Full cream milk ☐
- **c** Reduced fat milk ☐
- **d** Skim milk ☐
- **e** Soya milk ☐

Q68 **How much milk do you usually use per day?**
(Include flavoured milk and milk added to tea, coffee, cereal etc)

- None ☐
- Less than 250ml *(1 large cup or mug)* ☐
- Between 250ml and 500ml *(1-2 cups)* ☐
- Between 500ml and 750ml *(2-3 cups)* ☐
- 750ml *(3 cups)* or more ☐

Q69 **What type of bread do you usually eat?**

- **a** I don't eat bread ☐
- **b** High fibre white bread ☐
- **c** White bread ☐
- **d** Wholemeal bread ☐
- **e** Rye bread ☐
- **f** Multi-grain bread ☐

Q70 **How many slices of bread do you usually eat per day?** *(Include all types, fresh or toasted and count one bread roll as 2 slices)*

- Less than 1 slice per day ☐
- 1 slice per day ☐
- 2 slices per day ☐
- 3 slices per day ☐
- 4 slices per day ☐
- 5-7 slices per day ☐
- 8 or more slices per day ☐

Q71 **Which spread do you usually put on bread?**

- **a** I don't use any fat spread ☐
- **b** Margarine of any kind ☐
- **c** Polyunsaturated margarine ☐
- **d** Monounsaturated margarine ☐
- **e** Butter and margarine blends ☐
- **f** Butter ☐

Q72 **On average, how many eggs do you usually eat per week?**

- I don't eat eggs ☐
- Less than 1 egg per week ☐
- 1 to 2 eggs per week ☐
- 3 to 5 eggs per week ☐
- 6 or more eggs per week ☐

Q73 **What types of cheese do you usually eat?**

- **a** I don't eat cheese ☐
- **b** Hard cheeses eg parmesan, romano ☐
- **c** Firm cheeses eg cheddar, edam ☐
- **d** Soft cheeses eg camembert, brie ☐
- **e** Ricotta or cottage cheese ☐
- **f** Cream cheese ☐
- **g** Low fat cheese ☐

Q74a **Over the LAST 12 MONTHS, on average, how often did you eat the following foods?**
(Mark one on each line)

		Never	Less than once a week	Once a week or more
a	All-Bran™	☐	☐	☐
b	Sultana Bran™, Fibre Plus™, Branflakes™	☐	☐	☐
c	Weet Bix™, Vita Brits™, Weeties™	☐	☐	☐
d	Cornflakes, Nutrigrain™, Special K™	☐	☐	☐
e	Porridge	☐	☐	☐
f	Muesli	☐	☐	☐
g	Rice	☐	☐	☐
h	Pasta or noodles *(include lasagne)*	☐	☐	☐
i	Nuts	☐	☐	☐
j	Peanut butter or peanut paste	☐	☐	☐
k	Vegemite™, Marmite™, Promite™	☐	☐	☐
l	Tinned or frozen fruit *(any kind)*	☐	☐	☐
m	Oranges or other citrus fruit	☐	☐	☐
n	Apples	☐	☐	☐
o	Pears	☐	☐	☐
p	Bananas	☐	☐	☐
q	Watermelon, rockmelon, honeydew etc	☐	☐	☐
r	Pineapple	☐	☐	☐
s	Strawberries	☐	☐	☐
t	Apricots	☐	☐	☐
u	Peaches or nectarines	☐	☐	☐
v	Mango or paw paw	☐	☐	☐
w	Avocado	☐	☐	☐
x	Fruit or vegetable juice	☐	☐	☐
y	Potatoes cooked without fat	☐	☐	☐
z	Tomato sauce, tomato paste or dried tomatoes	☐	☐	☐
aa	Fresh or tinned tomatoes	☐	☐	☐
bb	Peppers *(capsicum)*	☐	☐	☐
cc	Lettuce, endive or other salad greens	☐	☐	☐
dd	Cucumber	☐	☐	☐
ee	Celery	☐	☐	☐
ff	Beetroot	☐	☐	☐
gg	Carrots	☐	☐	☐
hh	Cabbage or Brussels sprouts	☐	☐	☐
ii	Cauliflower	☐	☐	☐
jj	Broccoli	☐	☐	☐
kk	Silverbeet or spinach	☐	☐	☐
ll	Peas	☐	☐	☐
mm	Green beans	☐	☐	☐

		Never	Less than once a week	Once a week or more
nn	Bean sprouts or alfalfa sprouts	☐	☐	☐
oo	Baked beans	☐	☐	☐
pp	Soya beans, soy bean curd or tofu	☐	☐	☐
qq	Other beans *(include chick peas, lentils etc)*	☐	☐	☐
rr	Pumpkin	☐	☐	☐
ss	Onions or leeks	☐	☐	☐
tt	Garlic *(not garlic tablets)*	☐	☐	☐
uu	Mushrooms	☐	☐	☐
vv	Zucchini	☐	☐	☐

Q74b Over the LAST 12 MONTHS, on average, how often did you eat the following foods?
(Mark one on each line)

		Never	Less than once a week	Once a week	2-4 times per week	5 or more times per week
a	Cheese	☐	☐	☐	☐	☐
b	Ice cream	☐	☐	☐	☐	☐
c	Yoghurt	☐	☐	☐	☐	☐
d	Beef	☐	☐	☐	☐	☐
e	Veal	☐	☐	☐	☐	☐
f	Chicken	☐	☐	☐	☐	☐
g	Lamb	☐	☐	☐	☐	☐
h	Pork	☐	☐	☐	☐	☐
i	Fish, steamed, grilled or baked	☐	☐	☐	☐	☐
j	Fish, tinned *(salmon, tuna, sardines etc)*	☐	☐	☐	☐	☐

Q75 How often do you currently smoke cigarettes or any tobacco products?
(Mark one only)

- Daily ☐ → Go to Q76
- At least weekly *(but not daily)* ☐ → Go to Q77
- Less often than weekly ☐
- Not at all ☐ → Go to Q78

Q76 If you smoke daily, on average how many cigarettes do you smoke EACH DAY?
PRINT the number in the box

☐☐☐ cigarettes per day → Go to Q80

Q77 If you smoke, but not daily, on average how many cigarettes do you smoke PER WEEK?
PRINT the number in the box

☐☐☐ cigarettes per week

Q78 Have you ever smoked DAILY?
(Mark one only)

- Yes ☐
- No ☐ → If No, go to Q80

Q79 At what age did you finally stop smoking DAILY?
PRINT age in the box

☐☐ years old

Think about all of the time you spend sitting during EACH DAY while at home, at work, while getting from place to place or during your spare time.

Q80 **How many hours EACH DAY do you typically spend sitting down while doing things like visiting friends, driving, reading, watching television or working at a desk or computer?**

a	On a usual **WEEK DAY**	☐☐ hours
b	On a usual **WEEKEND DAY**	☐☐ hours

The next two questions are about the amount of physical activity you did LAST WEEK.

Q81 **How many *times* did you do each type of activity LAST WEEK?**
Only count the number of times when the activity lasted for 10 minutes or more.
*(If you did **not** do an activity, please write "0" in the box)*

a	**Walking briskly** *(for recreation or exercise, or to get from place to place)*	☐☐ times
b	**Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)*	☐☐ times
c	**Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)*	☐☐ times
d	**Vigorous household or garden chores** *(that make you breathe harder or puff and pant)*	☐☐ times

Q82 **If you add up all the times you spent in each activity LAST WEEK, how much time did you spend ALTOGETHER doing each type of activity?**
*(If you did **not** do an activity, please write "0" in the box)*

a	**Walking briskly** *(for recreation or exercise, or to get from place to place)*	☐☐ hours	☐☐ minutes
b	**Moderate leisure activity** *(like social tennis, moderate exercise classes, recreational swimming, dancing)*	☐☐ hours	☐☐ minutes
c	**Vigorous leisure activity** *(that makes you breathe harder or puff and pant like aerobics, competitive sport, vigorous cycling, running, swimming)*	☐☐ hours	☐☐ minutes
d	**Vigorous household or garden chores** *(that make you breathe harder or puff and pant)*	☐☐ hours	☐☐ minutes

Q83 **During the last three years, how often did you have sex?** *(Mark <u>one only</u>)*

- Did not have sex ☐
- Once a month or less ☐
- Two to three times a month ☐
- At least once a week ☐

women's health is about how you spend your time

Q84 **In a USUAL WEEK, how much time in total do you spend doing the following things?**
(Mark one on each line)

		I don't do this activity	1-15 hours	16-24 hours	25-34 hours	35-40 hours	41-48 hours	49 hours or more
a	Full time paid work	☐	☐	☐	☐	☐	☐	☐
b	Part-time paid work	☐	☐	☐	☐	☐	☐	☐
c	Casual paid work	☐	☐	☐	☐	☐	☐	☐
d	Home duties *(own / family home)*	☐	☐	☐	☐	☐	☐	☐
e	Work without pay *(eg family business)*	☐	☐	☐	☐	☐	☐	☐
f	Looking for work	☐	☐	☐	☐	☐	☐	☐
g	Unpaid voluntary work	☐	☐	☐	☐	☐	☐	☐
h	Active leisure *(eg walking, exercise, sport)*	☐	☐	☐	☐	☐	☐	☐
i	Passive leisure *(eg TV, music, reading, relaxing)*	☐	☐	☐	☐	☐	☐	☐
j	Studying	☐	☐	☐	☐	☐	☐	☐

Q85 **Managing time is often difficult. How often do you feel:**
(Mark one on each line)

		Every day	A few times a week	About once a week	About once a month	Never
a	That you are rushed, pressured, too busy?	☐	☐	☐	☐	☐
b	That you have time on your hands that you don't know what to do with?	☐	☐	☐	☐	☐

Q86 **Are you happy with your share of the following tasks and activities?**
(Mark one on each line)

		Happy the way it is	Would like other household members to do more	Would prefer another arrangement	Not applicable (don't do this)
a	Domestic work *(shopping, cooking, cleaning etc)*	☐	☐	☐	☐
b	Childcare	☐	☐	☐	☐
c	Caring for another adult *(who is elderly / disabled / sick)*	☐	☐	☐	☐
d	Other household work *(gardening, home / car maintenance)*	☐	☐	☐	☐

Q87 **Do you regularly provide (unpaid) care for grandchildren or other people's children?**
(Mark one only)

- ☐ Yes, daily
- ☐ Yes, weekly
- ☐ Yes, occasionally
- ☐ No, never

Q88 **Do you regularly provide care or assistance *(eg personal care, transport)* to any other person because of their long-term illness, disability or frailty?**
(Mark one on each line)

		Yes	No	
a	For someone who lives with you	☐	☐	If No to both, go to Q92
b	For someone who lives elsewhere	☐	☐	

Q89 **How many people with a long-term illness, disability or frailty do you regularly provide care for?**
(Mark one only)

- ☐ One person
- ☐ Two people
- ☐ More than two people

Q90 **How often in total do you provide this care or assistance?**
(Mark one only)

- ☐ Every day
- ☐ Several times a week
- ☐ Once a week
- ☐ Once every few weeks
- ☐ Less often

Q91 **How much time do you usually spend providing such care or assistance on each occasion?**
(Mark one only)

- ☐ All day and night
- ☐ All day
- ☐ All night
- ☐ Several hours
- ☐ About an hour

Q92 **Do you normally do any of the following kinds of paid work?**
(Mark all that apply)

		Yes
a	Paid shift work	☐
b	Paid work at night	☐
c	Paid work from home	☐
d	Self employment	☐
e	Paid work in more than one job	☐
f	Casual paid work	☐
g	Paid work involving none of the above	☐
h	I don't do any paid work	☐

For the following questions, WORK is defined as any paid work, unpaid voluntary work or work without pay (eg family business).

Q93 **In a seven day week, on how many DAYS would you say you are AT WORK *(paid or unpaid)*?**

☐☐ Number of days

Q94 **On average, on days when you are AT WORK *(paid or unpaid)*, how many hours per day do you work?**

☐☐ hours ☐☐ minutes

Q95 **Please estimate how much time you spent SITTING in each of the following activities on your last WORK day and on your last NON-WORK day *(weekend day or day off)*.**

		WORK DAY hours	WORK DAY minutes	NON-WORK DAY hours	NON-WORK DAY minutes
a	For TRANSPORT *(eg in a car, bus, train etc, but NOT on a bike)*				
b	At WORK *(eg sitting at a desk or using a computer)*				
c	Watching TV				
d	Using a computer at home *(email, games, information, chatting)*				
e	Other leisure activities *(socializing, movies etc, but NOT including TV or computer use)*				

Q96 **How much time did you spend SLEEPING on each of these days?**

WORK DAY hours	WORK DAY minutes	NON-WORK DAY hours	NON-WORK DAY minutes

Q97 **Was this a usual work day / non-work day?**
(Please mark Yes or No for work day and non-work day)

WORK DAY Yes	WORK DAY No	NON-WORK DAY Yes	NON-WORK DAY No
☐	☐	☐	☐

Q98 **We would like to know YOUR and YOUR PARTNER'S main occupation NOW:**
(Mark <u>one in each column</u>)

	A self	B partner
Manager or administrator *(eg magistrate, farm manager, media producer, school principal)*	☐	☐
Professional *(eg registered nurse, allied health professional, teacher, artist)*	☐	☐
Associate professional *(eg office manager, branch manager, shop manager, retail buyer, youth worker, police officer)*	☐	☐
Tradesperson or related worker *(eg cook, dressmaker, hairdresser, gardener, florist)*	☐	☐
Advanced clerical or service worker *(eg credit officer, radio despatcher, personal assistant, flight attendant, law clerk)*	☐	☐
Intermediate clerical, sales or service worker *(eg accounts clerk, checkout supervisor, data entry operator, child care worker, nursing assistant, hospitality worker)*	☐	☐
Intermediate production or transport worker *(eg machine operator, bus driver)*	☐	☐
Elementary clerical, sales or service worker *(eg filing / mail clerk, parking inspector, sales assistant, telemarketer, housekeeper)*	☐	☐
Labourer or related worker *(eg cleaner, factory worker, kitchen hand, fast food cook)*	☐	☐
No paid job	☐	☐
Don't know or no partner		☐

Q99 **How do you manage on the income you have available?**
(Mark one only)

- It is impossible ☐
- It is difficult all the time ☐
- It is difficult some of the time ☐
- It is not too bad ☐
- It is easy ☐

Q100 **Are there people who do NOT live with you who are dependent on your household income?**
(Mark one only)

- No ☐
- Yes, one ☐
- Yes, more than one ☐

Q101 **Women's employment patterns have changed a lot over recent years. We are keen to learn how women see retirement in their own lives. Please indicate the following description that best fits your life now. If you want to add more please write this on page 30.**
(Mark one only)

- I am not retired at all ☐
- I am partially retired ☐
- I am completely retired from paid work ☐
- I gave up paid work over 20 years ago ☐
- I have never been in paid work ☐

Q102 **When did you retire or give up work completely?**

(Print year in the box) ☐☐☐☐ Not applicable ☐

Q103 **At what age do you expect to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q104 **You have said when you expect to retire, but if you had the choice, at what age would you like to retire (completely) from the paid workforce?**

(Print age, in whole years, in the box) ☐☐

- Do not expect to ever retire ☐
- Have already retired ☐
- Don't know ☐

Q105 **What are your CURRENT sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q106 **When you are OVER 65 what will be your sources of income?**
(Mark all that apply)

		Yes
a	Age pension / Service pension / Widow's pension / War Widow's pension	☐
b	Other government pension or allowance	☐
c	Lump sum superannuation payout	☐
d	A pension or annuity purchased with superannuation or some other funds	☐
e	Income from savings and investments *(such as shares and property)*	☐
f	Income from a business	☐
g	Income or pension from your spouse / partner	☐
h	Financial support from family	☐
i	Spouse / partner's superannuation	☐
j	Wage or salary	☐
k	Other sources	☐

Q107 **When you are 65 how do you expect to manage on your available income?**
(Mark one only)

- It will be impossible ☐
- It will be difficult all of the time ☐
- It will be difficult some of the time ☐
- It will not be too bad ☐
- It will be easy ☐

Q108 **What is the highest qualification you have completed?**
(Mark one only)

- No formal qualifications ☐
- School or Intermediate Certificate (*or equivalent*) ☐
- High School or Leaving Certificate (*or equivalent*) ☐
- Trade / apprenticeship (*eg Hairdresser, Chef*) ☐
- Certificate / diploma (*eg Child care, Technician*) ☐
- University degree ☐
- Higher University degree (*eg Grad Dip, Masters, PhD*) ☐

Q109 **These questions are about getting on with other people:**
(Mark one on each line)

		Yes	No
a	Are you sad or lonely often?	☐	☐
b	Do you feel uncomfortable with anyone in your family?	☐	☐
c	Can you take your own medication and get around by yourself?	☐	☐
d	Do you feel that nobody wants you around?	☐	☐
e	Does someone in your family make you stay in bed or tell you you're sick when you know you are not?	☐	☐
f	Has anyone forced you to do things you didn't want to do?	☐	☐
g	Has anyone taken things that belong to you without your OK?	☐	☐
h	Do you trust most of the people in your family?	☐	☐
i	Do you have enough privacy at home?	☐	☐
j	Has anyone close to you tried to hurt or harm you recently?	☐	☐
k	Has anyone close to you called you names or put you down or made you feel bad recently?	☐	☐
l	Are you afraid of anyone in your family?	☐	☐
m	Does anyone in your family drink a lot of alcohol?	☐	☐
n	Have you ever been in a violent relationship with a partner / spouse?	☐	☐

Q110 **What is your present marital status?** *(Mark one only)*

- Married *(registered)* ☐
- De facto relationship *(opposite sex)* ☐
- De facto relationship *(same sex)* ☐
- Separated ☐
- Divorced ☐
- Widowed ☐
- Never married ☐

■

Q111 **How many people live with you now?** *(Mark all that apply)*

a	No one, I live alone	☐		
b	Partner or spouse	☐		
		One	Two	Three or more
c	Children under 16 years	☐	☐	☐
d	Children 16-18 years	☐	☐	☐
e	Children over 18 years	☐	☐	☐
f	Your parents or in-laws	☐	☐	☐
g	Other adult relatives	☐	☐	☐
h	Other adults *(not family members)*	☐	☐	☐

■

Q112 **People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it?**
(Mark one on each line)

		None of the time	A little of the time	Some of the time	Most of the time	All of the time
a	Someone to help you if you are confined to bed	☐	☐	☐	☐	☐
b	Someone you can count on to listen to you when you need to talk	☐	☐	☐	☐	☐
c	Someone to give you good advice about a crisis	☐	☐	☐	☐	☐
d	Someone to take you to the doctor if you need it	☐	☐	☐	☐	☐
e	Someone who shows you love and affection	☐	☐	☐	☐	☐
f	Someone to have a good time with	☐	☐	☐	☐	☐
g	Someone to give you information to help you understand a situation	☐	☐	☐	☐	☐
h	Someone to confide in or talk to about yourself or your problems	☐	☐	☐	☐	☐
i	Someone who hugs you	☐	☐	☐	☐	☐
j	Someone to get together with for relaxation	☐	☐	☐	☐	☐
k	Someone to prepare your meals if you are unable to do it yourself	☐	☐	☐	☐	☐
l	Someone whose advice you really want	☐	☐	☐	☐	☐
m	Someone to do things with to help you get your mind off things	☐	☐	☐	☐	☐
n	Someone to help with daily chores if you are sick	☐	☐	☐	☐	☐
o	Someone to share your most private worries and fears with	☐	☐	☐	☐	☐
p	Someone to turn to for suggestions about how to deal with a personal problem	☐	☐	☐	☐	☐
q	Someone to do something enjoyable with	☐	☐	☐	☐	☐
r	Someone who understands your problems	☐	☐	☐	☐	☐
s	Someone to love and make you feel wanted	☐	☐	☐	☐	☐

Q113 **In general, are you satisfied with what you have achieved in your life so far in the areas of:**
(Mark one on each line)

		Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
a	Work	☐	☐	☐	☐
b	Career	☐	☐	☐	☐
c	Study	☐	☐	☐	☐
d	Family relationships	☐	☐	☐	☐
e	Partner / closest personal relationship	☐	☐	☐	☐
f	Friendships	☐	☐	☐	☐
g	Social activities	☐	☐	☐	☐

Q114 **What is your date of birth?**

Day Month 19 Year

Q115 **Did someone help you fill in this survey?** *(Mark one only)*

- No ☐
- Yes, but I told them the answers I wanted ☐
- Yes, but the helper answered for me using his / her own judgement ☐

Q116 **What was the MAIN reason for your needing help to fill in this survey?** *(Please describe)*

Have we missed anything?

If there is ANYTHING else you would like to tell us about changes in your health (especially in the last three years) please write on the lines below.

Consent

I agree to the research team following health and other records relating to me, including hospital and health service use records and cancer registers and other chronic conditions registers as described to me in the accompanying brochure. I also understand this means I agree to Medicare releasing information concerning services provided to me under Medicare, the Department of Veterans' Affairs, the Pharmaceutical Benefits Scheme and the Repatriation Pharmaceutical Benefits Scheme, including past information, for the duration of the study, as outlined in the enclosed brochure. *(Mark one only)*

Yes → ☐ No → ☐

Please sign below and send the completed survey back to us in the envelope supplied as soon as possible. We will detach the consent form and store it in a separate locked room.

I consent to the researchers 'matching' the information provided in this survey with that given in previous surveys so that any changes in my health can be noted.

Signature **Date** / /

What is your Maiden Name? (Please print in the boxes)

Have you remembered to measure your waist?
Page 17 Question 56.

Help us keep in touch

Sometimes we lose touch with our participants. It would be helpful if you could give us your mobile phone number and email address.

Mobile

Email

It would be helpful also, if you could give us details of **a relative or friend** who will be able to help us find you, after checking that the relative or friend is happy for you to provide these details.

Name

Address

Town / Suburb State Postcode

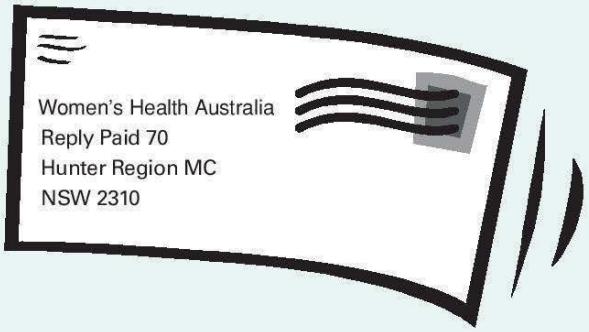
Phone ( ) **Relationship to you**

Thank you for taking the time to complete this survey.

If you have any questions you can contact us by telephoning

1800 068 081 ***(freecall).***

Don't forget to sign the consent and post this back to us!



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Australian Longitudinal Study on Women's Health

The University of Newcastle, Callaghan NSW 2308.
Phone: 02 4913 8872 Fax: 02 4913 8888
Email: whasec@newcastle.edu.au
Web: www.alswh.org.au

Appendix 3 Ethics approval letter

FW: UTS HREC Letter of Noting

David Sibbritt <David.Sibbritt@uts.edu.au>

Mon 5/05/2014 12:21 PM

To:Jon Adams <Jon.Adams@uts.edu.au>; Wen Bo Peng < >; Louise Hickman <Louise.Hickman@uts.edu.au>;

FYI

==========
Professor David Sibbritt
Professor of Epidemiology
Faculty of Health
University of Technology Sydney
Building 10, Level 7, Room 232
235-253 Jones Street
Ultimo NSW 2007

Phone: +61 2 9514 4172
Fax: +61 2 9514 4835
Twitter: @davidsibbritt
==========

-----Original Message-----
From: Research.Ethics@uts.edu.au [mailto:Research.Ethics@uts.edu.au]
Sent: Friday, 2 May 2014 3:07 PM
To: Research Ethics; David Sibbritt
Subject: UTS HREC Letter of Noting

Dear Applicant,

The Faculty has considered your Nil/Negligible Risk Declaration Form for your project titled, "The use of complementary and alternative medicine for the treatment of menopausal symptoms: a quantitative analysis of a nationally representative sample of Australian women", and agree your research does not require review from the UTS Human Research Ethics Committee. Please keep a copy of your Declaration form on file to show you have considered risk.

For tracking purposes, you have been provided with an ethics application number, which is UTS HREC 2014000045.

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 noting.

Instructions for saving the declaration form can be downloaded from:

http://www.research.uts.edu.au/policies/restricted/human/forms.html#instructions
To access this application, please follow the URLs below:
* if accessing within the UTS network: http://rmprod.itd.uts.edu.au/RMENet/HOM001N.aspx
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If you or anyone connected with this research have any queries please do not hesitate to contact Research.Ethics@uts.edu.au

Yours sincerely,

Professor Marion Haas
Chairperson
UTS Human Research Ethics Committee
C/- Research & Innovation Office
University of Technology, Sydney
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F: (02) 9514 1244
E: Research.Ethics@uts.edu.au
I: http://www.research.uts.edu.au/policies/restricted/ethics.html
P: PO Box 123, BROADWAY NSW 2007
[Level 14, Building 1, Broadway Campus]
CB01.14.08.04

REF: E28

Appendix 4 Media release associated with findings of this research

Contact:

The North American Menopause Society
Eileen Petridis
Phone: (216) 696-0229
epetridis@fallscommunications.com

NAMS
THE NORTH AMERICAN MENOPAUSE SOCIETY

More Women Turning to CAM for Menopause Without Medical Guidance

CLEVELAND, Ohio (June 10, 2015)—The use of complementary and alternative medicine (CAM) is increasing for the treatment of menopausal symptoms but often without the guidance of a clinician. That's according to a new study reported online today in *Menopause*, the journal of The North American Menopause Society (NAMS). As a result, the authors suggest that healthcare providers—in particular family medicine practitioners—need to be more aware of the various CAM therapies and take a more active role in guiding patients through their options to more safely and effectively coordinate their care.

Ongoing fear of the potential risks of hormone therapy is cited as a primary reason for the growing use of CAM among menopausal women (including pre-, peri- and postmenopausal) in recent decades. CAM is a general term for healthcare practices and products not associated with the conventional medical profession. Some of the more commonly accessed CAM practitioner groups include massage therapists, naturopaths/herbalists, chiropractors/osteopaths, and acupuncturists. The more popular self-prescribed CAM supplements/activities include vitamins/minerals, yoga/meditation, herbal medicines, aromatherapy oils and/or Chinese medicines.

Although there is still ongoing debate within the medical industry regarding the proven effectiveness of CAM alternatives, the point of this study was to confirm that most adults seeking treatment for their symptoms purchase CAM products or services without the guidance of a healthcare practitioner. It is estimated that 53% of menopausal women use at least one type of CAM for the management of such menopause-related symptoms as hot flashes, night sweats, anxiety, depression, stiff or painful joints, back pain, headaches, tiredness, vaginal discharge, leaking urine and palpitations.

This raises major safety concerns, according to the authors, since much of the use of self-prescribed CAM products is done without a medical consultation. The greatest safety concern relates to the large percentage of menopausal women who typically use CAM products concurrently with conventional medicine but who may be unaware of the possible herb-drug interactions.

"There is still much to be learned in the CAM arena and women need to understand that just because something appears natural does not necessarily mean it is without risk, especially for certain populations," says NAMS Medical Director Wulf Utian, MD, PhD, DSc . "In the meantime, this study does a good job of alerting clinicians to the growing interest in CAM alternatives and of the critical role of health providers in helping educate patients on the potential risks and benefits of all options."


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Reference
Peng W, Adams J, Hickman L, Sibbritt DW. Longitudinal analysis of associations between women's consultations with complementary and alternative medicine practitioners/use of self-prescribed complementary and alternative medicine and menopause-related symptoms, 2007-2010. Menopause. 2015 Jun 8. [Epub ahead of print]
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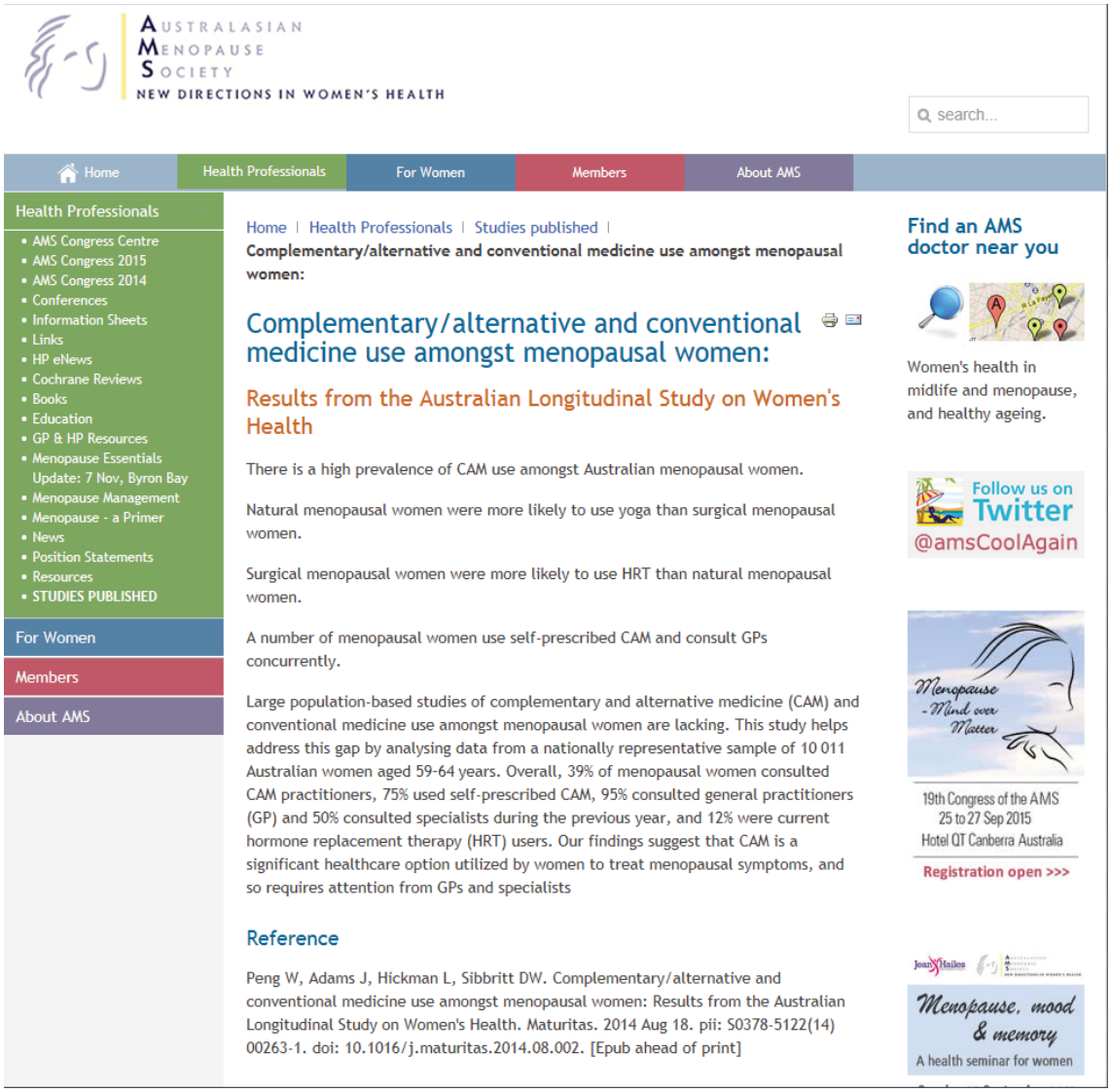
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Complementary/alternative and conventional medicine use amongst menopausal women:
Results from the Australian Longitudinal Study on Women's Health
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Surgical menopausal women were more likely to use HRT than natural menopausal women.
A number of menopausal women use self-prescribed CAM and consult GPs concurrently.
Large population-based studies of complementary and alternative medicine (CAM) and conventional medicine use amongst menopausal women are lacking. This study helps address this gap by analysing data from a nationally representative sample of 10 011 Australian women aged 59-64 years. Overall, 39% of menopausal women consulted CAM practitioners, 75% used self-prescribed CAM, 95% consulted general practitioners (GP) and 50% consulted specialists during the previous year, and 12% were current hormone replacement therapy (HRT) users. Our findings suggest that CAM is a significant healthcare option utilized by women to treat menopausal symptoms, and so requires attention from GPs and specialists
Reference
Peng W, Adams J, Hickman L, Sibbritt DW. Complementary/alternative and conventional medicine use amongst menopausal women: Results from the Australian Longitudinal Study on Women's Health. Maturitas. 2014 Aug 18. pii: S0378-5122(14) 00263-1. doi: 10.1016/j.maturitas.2014.08.002. [Epub ahead of print]
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