Healthcare utilisation for back pain by Australian women aged 59-64.

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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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Dedications

Dedicated to my parents and family .....

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List of Abbreviations

ALSWH	Australian Longitudinal Study on Women's Health
ASGC	Australian Standard Geographical Classification
CAM	Complementary and Alternative Medicine
DALYs	Disability-adjusted life-years
EoI	Expression of Interest
GP	General Practitioner
HIV	Human immunodeficiency virus
HSR	Health Services Research
LBP	Lower back pain
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
UK	United Kingdom
US	United States

Manuscript for publication incorporated into the thesis

The manuscript contained in the thesis (appendix 3) will be submitted to a peer reviewed journal .

The title of the manuscript contained in the thesis is as follows:

The characteristics of women who consult health care practitioners for back pain: a nationally representative sample of 1,310 Australian women aged 59-64 years.

Abstract

Background: Back pain affects a substantial proportion of the adult population and back pain sufferers tend to explore a wide range of health care options. This study investigates the health care utilisation amongst Australian women with back pain.

Method: This is a sub-study of the Australian Longitudinal Study on Women's Health (ALSWH), designed to investigate multiple factors affecting the health and well-being of women over a 20-year period. The study focuses on 1,851 women aged 59-64 years, who had indicated that they had previously sought help from a health care practitioner for back pain.

Results: Half of the women (56.5% n=738) with back pain had consulted a general practitioner (GP), 16.2% (n=213) had consulted a medical specialist and 37.3% (n=488) had consulted a physiotherapist for their back pain. Women consulted a GP and/or a medical specialist for back pain related symptoms/conditions: back pain (56.2%); leg pain or sciatica (39.7%); sleeping problems (36.9%); anxiety/tension (27.9%), pins and needles/numbness (27.7%); neck pain (27.6%); fatigue (25.5%); depression (25.1%); muscle spasm (23.6%); headaches/migraines (23.0%); stiffness (21.6); arm pain (19.1%); weakness (15.7%); nausea (12.7%); and instability (7.1%). On the other hand, a physiotherapist was consulted: back pain (68.0%); neck pain (45.5%); leg pain or sciatica (39.3%); stiffness (32.2%); muscle spasm (22.3%); arm pain (21.3%); pins and needles or numbness (17.6%); headaches or migraines (13.9%); weakness (8.8%); instability (5.5%); and other problems (14.1%). Further, women with regular or continuous back pain were more likely to consult a GP (OR=3.98), medical specialist (OR=5.66) and a physiotherapist (OR=1.63). Women who consulted a general practitioner and/or a medical specialist had a statistically

significantly higher mean typical back pain intensity compared to women who did not consult a general practitioner ($p=0.001$) or medical specialist ($p<0.001$).

Conclusion: Australian women with back pain were more likely to consult a GP, medical specialist or physiotherapist if they had more regular/continuous back pain. However, women were more likely to consult a GP for back pain associated with psychosomatic comorbid conditions and consulted a physiotherapist for musculoskeletal issues. There is a need for a more formal cross-referral system, wherein medical specialists and physiotherapists refer patients with comorbid conditions to a GP if they were the first practitioners to be visited. It is important that future research to further investigate the consultation and referral patterns identified in this study to inform healthcare industry and the policy makers about the healthcare utilisation among Australian women with back pain.

Key words: Medical health care, allied health care, physiotherapist, back pain, referral patterns

1. Background

1.1 Chapter Introduction

In this chapter, a background for the thesis will be provided by contextualising the research within the field of Health Services Research (HSR) as the overarching framework for examining women's use of medical healthcare for back pain. Medical healthcare utilisation among women with back pain including care received from general practitioners (GPs), medical specialists and physiotherapists. Further, this chapter will present the research aims, objectives and the related research questions of the study. This chapter will also outline the structure for the following thesis chapters.

1.2 Integration between medical and allied health care services among women with back pain: A health services research study

This thesis draws upon the methods and principles of HRS to critically examine the integration among medical and allied healthcare in providing treatment for back pain. This background section outlines a broad definition and role of HRS as well as the application and significance of HSR approach to the broad exploration of integration of medical and allied healthcare services among women with back pain.

1.3 Definition of health services research

HSR is positioned within a broad domain of multi-disciplinary approaches encompassing basic, as well as applied, research for improving the understanding of the effects of healthcare provision on individuals and populations (Lohr & Steinwachs, 2002; M. Weiner, 2014). The field of HSR emerged as a study discipline during the 1960s to inform policies by monitoring access to healthcare and the cost

and quality of healthcare to link biomedical research with healthcare provision (Lohr & Steinwachs, 2002; M. Weiner, 2014). In 2000, the association for Health Services Research (HSR) in the United States updated the definition of HSR to represent "the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviours affect access to healthcare, the quality and cost of healthcare, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations (Ebinger & Spertus, 2017; Lohr & Steinwachs, 2002).

1.3.1 Health services research approach used for the investigation of medical healthcare

By including a broad range of disciplinary perspectives in the field of healthcare, HSR has evolved to extend the scope of research interest across a range of topics such as healthcare behaviours, decision-making, service delivery, communication, accessibility, cost and outcomes of healthcare delivery and provision (Adams & Steel, 2012). HSR integrates epidemiologic, sociological, economic and other analytical scientific methods in the study of health services (Ebinger & Spertus, 2017). By drawing upon research designs, analytic techniques and methods from these scientific fields, HSR can estimate the prevalence of use of health services and evaluate the outcomes of the medical healthcare delivery that is accessed by individuals, groups or populations (Scutchfield, Marks, Perez, & Mays, 2007). Data in HSR is primarily drawn from population surveys, documents and direct observations (Shi, 2007; Starfield & Shi, 2007). HSR often uses survey questionnaires, medical records, health-status and quality of life measures and condition-specific measures administered to representative samples of the population to obtain data about the

patient experience of healthcare (Steinwachs & Hughes, 2008). Using these databases in HSR offers opportunities to examine large representative samples at relatively low cost and to systematically analyse healthcare utilisation for common conditions (Steinwachs & Hughes, 2008).

Beyond these, HSR methods include the examination of processes of care such as doctor-patient communication patterns and their impact on satisfaction with and outcomes of care. HSR plays a key role in informing governments, insurers, consumers, and others making decisions about health-related issues (Steinwachs & Hughes, 2008). The evidence generated by HSR can contribute towards advising healthcare providers and healthcare systems regarding practices, policies, and therapies to improve the effectiveness of care provision for populations and individuals (Horner, Russ-Sellers, & Youkey, 2013).

1.4 Research problem

Despite the vast amounts of government and private money invested in back pain care/research and the knowledge that women report back pain more than men, very little is known about Australian women's use of medical and allied healthcare in back pain care. There exists little knowledge on how decisions regarding women's choice of the medical and allied practitioner(s) or choices of treatments are made, what information and knowledge underpin women's decision making in choosing medical and allied healthcare for back pain care.

Studies on the integration of healthcare options in the management of back pain have been conducted on the efficacy of medical healthcare and allied healthcare, but not on determining the level of integration among the healthcare options. The lack of

detailed empirical investigation into the extent of integration of healthcare options amongst women with back pain in Australia indicates that there is a need for studies to determine the extent of integration of healthcare practices. The proposed research will investigate the extent of medical healthcare use and allied healthcare use among Australian women, drawing upon data collected as part of the ALSWH (a nationally representative sample).

1.5 Aims and research questions

This study investigates the prevalence of medical healthcare and allied healthcare utilisation among Australian women with back pain and to review the extent of integration between medical healthcare and allied healthcare for back pain. The data of ALSWH survey will be analysed to investigate medical healthcare utilisation among Australian women with back pain and the profile of medical and allied healthcare users and usage.

1.5.1 Aims of the study

1. To investigate the association between medical (e.g. GP, medical specialist) and allied healthcare (e.g. physiotherapist) utilisation among Australian women with back pain; and
2. To investigate the back pain characteristics (e.g. frequency of back pain, years living with back pain, the intensity of typical back pain) among Australian women with back pain.

1.5.2 Research questions

1. What is the association between medical and allied healthcare utilisation (GP, specialist, physiotherapists etc.) among Australian women with back pain?
2. What are the back pain characteristics (e.g. frequency of back pain, years living with back pain, the intensity of typical back pain) among Australian women with back pain?

1.5 Significance and scope of thesis

This study employs a health services research approach to close the gap in knowledge on integration of healthcare options for back pain among Australian women. By examining how back pain sufferers utilise medical and allied healthcare, the HSR approach contributes to linking healthcare practice with health policy for back pain care. This thesis uses an HSR approach to examine the use of healthcare modalities among a large sample of women experiencing back pain. The specific research problem aims, and scope of the thesis are outlined below.

Until recently, biomedical professionals alone influenced and shaped Australian healthcare delivery (Baer, 2008a). In the current context of diversified healthcare options, this position of relative biomedical dominance has been challenged by an increasing array of practices and practitioners operating within/beside (i.e. allied health) and outside (i.e. complementary and alternative medicine) the biomedical setting (Baer, 2008b). Thereby back pain care serves as a good example of contemporary therapeutic pluralism, with physiotherapists, general practitioners (GPs) and a range of CAM practitioners all providing treatment options for back pain (D. W. Sibbritt & Adams, 2010b).

1.6 Organisation of thesis

Chapter 1 presents background information on: an HSR approach to conventional medicine research both generally and specifically relating to women's use of conventional medicine for back pain; categories of conventional medicine modalities, utilisation of conventional medicine generally for women's health and specifically among women with back pain; and the wider context of back-pain care in Australia including consulting a GP, medical specialist and/or physiotherapist and the integration among providers.

Chapter 2 reviews the international literature relating to conventional medicine use for back pain, with a focus on the prevalence of conventional medicine use for back pain, commonly used conventional medicine for back pain care.

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

Chapter 4 presents the results from the study regarding the prevalence of use and characteristics of Australian women (aged 59 -64 years) who use conventional medicine practitioners for back pain.

Chapter 5 discusses the implications of the findings of this thesis in the context of previous research.

Chapter 6 identifies limitations of the study, highlights important issues relevant to the research objectives and identifies areas for future research.

Chapter 7 summarises the primary findings of this thesis, and highlights future research and policy directions, which may be addressed from the results of the study.

1.7 The wider significance of back pain care

Back pain is one of the most common health problems affecting 80-85% of people over their lifetime and the most frequent complaint restricting activity among the young and middle-aged people (D Hoy, Brooks, Blyth, & Buchbinder, 2010). A systematic review of global prevalence of low back pain revealed that the mean overall prevalence rate was 31%, and that low back pain is the most prevalent among women aged 40-80 years (Damian Hoy et al., 2012). Being the second most leading cause of sick leave, back pain poses a great burden on individuals, families, communities, governments and health care resources (D Hoy et al., 2010; Myburgh, Boyle, Lauridsen, Hestbaek, & Kongsted, 2015). Of the 291 disease conditions studied in 2010, low back pain was ranked as the greatest contributor to global disability (measured in years of life lost) and the sixth in terms of overall burden (measured in disability adjusted life years) (Damian Hoy et al., 2014). Low back pain was ranked the greatest contributor to overall disability in Australia (Damian Hoy et al., 2014). Low back pain tends to be non-specific in most cases with only 10% of cases with identifiable specific causes and when back pain is persistent for several months, the resulting disability worsens with increasing duration of pain (Krismer & Van Tulder, 2007).

Chronic back pain often results in loss of function, associated distress, behavioural problems, limited daily functioning ability besides work disability and dependence on others for care (Krismer & Van Tulder, 2007). It is known that after six months of back pain related sick leave, fewer than 50% return to work, and after 2 years' absence from work it is likely to become permanent (Watson, Main, Waddell, Gales, & Purcell-Jones, 1998). Back pain sufferers cost hundreds of millions of dollars every

year and are considered a major economic burden for the health system. Therefore, back-pain care services are an essential aspect of healthcare delivery. This following section addresses back pain care, with description of the definitions of back pain, impact of back pain on individuals and the economic burden caused by back pain.

1.7.1 Definition of Back pain

Back pain is pain felt in the back along the spine and the anatomic classification of back pain follows the segments of the spine: neck pain (cervical), middle back pain (thoracic), lower back pain (lumbar) or coccydynia (tailbone or sacral pain) with the lumbar vertebrae area most common for pain (Duthey, 2013a; Ehrlich, 2003; Kleinig, Brophy, & Maher, 2011). Lower back pain is pain located between the 12th rib and the inferior gluteal folds (Krismer & Van Tulder, 2007). Defining back pain is complex, as back pain is neither a disease nor a diagnostic entity and is syndromic in presentation, seldom with a single identifiable cause and often non-specific (Ehrlich, 2003). For the purpose of this thesis, the term ‘back pain’ and ‘lower back pain’ are used interchangeably.

1.7.2 Medical classification of back pain

Back pain may occur as acute (sudden and intense), sub-acute (between acute and chronic), or chronic (persisting for a long time or constantly recurring) depending on the duration. While acute and sub-acute pain represents the early manifestation of the condition, chronic low back pain is associated with high levels of disability, characterising the late stages of the condition (Krismer & Van Tulder, 2007). The pain may be characterised as a dull ache, shooting or piercing pain, or a burning sensation. Depending on the location pain may radiate into the arms and hands as well as the legs or feet, and may include paraesthesia (tingling with no apparent

cause), weakness or numbness in the legs and arms (Kleinig et al., 2011). The pain may be caused due to muscles, nerves, bones, joints or other structures in the vertebral column (spine). Internal structures such as the heart, gallbladder, and pancreas may also cause referred pain in the back.

1.7.3 Lower back pain (LBP)

Back pain is common, with about nine out of ten adults experiencing it at some point in their life, while five out of ten working adults having it every year (Patel & Ogle, 2000). When no specific pathology is associated with causing back pain, the term ‘non-specific low back pain’ (LBP) is utilised and 90% of individuals experience non-specific LBP (Ehrlich, 2003). One-year prevalence of non-specific LBP is estimated to be 15% to 45% and the lifetime prevalence is estimated at 60% to 70% among developed countries (Duthey, 2013a). For this thesis, responses by women of having experienced back pain in the 12 months prior to the survey were considered for analysis.

LBP is categorised into three types; when LBP occurs suddenly after a minimum period of six months without a history of LBP and lasts for less than six weeks, it is considered as ‘acute LBP' (Ehrlich, 2003). When LBP occurs suddenly after a period of a minimum of six months without LBP and lasts for between six weeks and three months, it is considered as ‘sub-acute' (Ehrlich, 2003). LBP lasting for more than three months, and/or when LBP occurs episodically within a six-month period, it is considered as ‘chronic LBP’ (Krismer & Van Tulder, 2007).

However, it is rare for it to be permanently disabling, and in most cases of herniated disks and stenosis, rest, injections or surgery have similar general pain resolution outcomes on average after one year. In the United States, acute low back pain is the

fifth most common reason for physician visits and causes 40% of missed days off work (Manchikanti, Singh, Datta, Cohen, & Hirsch, 2008). Additionally, it is the single leading cause of disability and one of the five leading cause of disability-adjusted life-years (DALYs) worldwide (Murray et al., 2015).

1.7.4 Non-specific back pain

While a minority of back pain has identifiable causes, most non-specific back pain is of vague origin and may result from several factors such as lifestyle factors, heavy physical work, occupational risk factors, awkward static or dynamic postures, manual work, lifting and psychological factors (Duthey, 2013a). A range of psychological and occupational factors have shown to be linked with both the occurrence and chronicity of back pain (Krismer & Van Tulder, 2007). Factors such as obesity and pregnancy can contribute back pain by disrupting the natural curvature of the spine (Ehrlich, 2003). Risk factors for back pain include trauma, cancer, use of systemic steroids, drug abuse or human immunodeficiency virus (HIV) infection. In such cases, neurological symptoms, weight loss or thoracic pain may be present depending on the related cause and, additionally, neurological signs and structural deformities can often be exhibited (Krismer & Van Tulder, 2007).

1.7.5 Specific low back pain (Specific LBP)

Specific LBP is a term restricted to LBP with identifiable causes and accounts for less than 20% of LBP cases, the probability that a case of back pain has a specific cause is only 0.2% of all LBP cases (Ehrlich, 2003). These cases include back pain resulting from trauma (i.e. moving vehicle accident, fall), osteoporosis with fractures, prolonged use of corticosteroids among older people, vertebral infections; tumours, metabolic bone disease, psychogenic pain and congenital disorders (Ehrlich, 2003).

In this thesis, as the data is gathered through self-reporting by back-pain sufferers, the type of back pain is not specified.

1.7.6 Risk factors for LBP

When LBP results from specific causes, certain signs and symptoms are shown to be common. For example, violent trauma causing back pain may present with constant, progressive, non-mechanical pain associated with severe restriction of lumbar flexion (Krismer & Van Tulder, 2007). Often, when LBP is due to specific causes occurring in individuals over 55 years of age, the causes may be related to cancer, use of systemic steroids, drug abuse or human immunodeficiency virus (HIV) infection. In such cases, neurological symptoms, weight loss or thoracic pain may be present depending on the related cause and, additionally, neurological signs and structural deformities can often be elicited (Krismer & Van Tulder, 2007).

While a minority of LBP cases have identifiable causes, most LBP (non-specific) is of obscure origin and may result from several factors such as lifestyle factors, heavy physical work, occupational risk factors, awkward static or dynamic postures, manual work, lifting and psychological factors (Duthey, 2013b). range of psychological and occupational factors have shown to be linked with both the occurrence and chronicity of back pain (Krismer & Van Tulder, 2007). Although the erect posture of humans can be a predisposing factor for back pain, the natural curvature of the spine counteracts such risk, except in conditions where distortion of the spinal curves is triggered by factors such as obesity or pregnancy (Ehrlich, 2003). Low abdominal strength or lumbar lordosis has also been shown to play a role in LBP (Ehrlich, 2003). Running, jogging, driving vehicles, sitting in inadequately responsive chairs and heavy lifting are also known to be risk factors for back pain (Ehrlich, 2003).

Research has shown some evidence that both current smokers and former smokers have a higher risk for back pain in comparison to those who have never smoked (Shiri, Karppinen, Leino-Arjas, Solovieva, & Viikari-Juntura, 2010).

Psychological factors such as stress and anxiety have also been shown to be linked to the onset of back pain, while distress and depressive mood have been associated with the chronicity of back pain (Krismer & Van Tulder, 2007). Poor job satisfaction seems to play a major role in the onset and chronicity of back pain and research has shown that although job dissatisfaction is strongly linked to back pain among younger men, this predisposition equalises itself among both genders as they get older (Ehrlich, 2003).

1.7.7 Biomechanics of LBP

The biomechanics o can be complex and non-specific LBP may involve several tissues including muscles, ligaments, joint capsule cartilage, soft connective tissue and blood vessels (Duthey, 2013a). The tissues involved in back pain may be strained, stretched, pulled or sprained producing inflammation and releasing inflammatory chemicals (i.e. cytokines, chemokines). These inflammatory chemicals stimulate the nerve fibres causing pain and swelling (Duthey, 2013a). Although disc herniation and spinal stenosis are often considered as risk factors for back pain, and despite surgical intervention in these conditions, the outcomes tend to be highly varied and such surgeries have rarely been shown to alleviate back pain definitively (Duthey, 2013a; Ehrlich, 2003). Overall, the mechanism of back pain can be obscure, and the diagnosis of back pain may be complex making treatment of back pain uncertain.

1.7.8 Back pain related symptoms/co-morbidities

There is much evidence that pain conditions such as back pain are often associated with co-morbidities (Dworkin, Von Korff, & LeResche, 1990). A number of conditions and symptoms including headache, depression, anxiety, sleeping problems, fatigue and weakness have been linked to LBP (Bingefors & Isacson, 2004). Due to the influence of psychological factors involved in the onset and progression of back pain, studies recognise psychological problems as being intimately associated with pain (Bingefors & Isacson, 2004). A population-based survey of 4,056 people aged between 20-64 showed that headache, as co-morbidity, was strongly linked to back pain (Bingefors & Isacson, 2004). In this study, headache, sleeping problems, anxiety and depressive symptoms were among the co-morbidities in both genders linked to back pain and pain in the extremities. Headache, depressive symptoms, sleeping problems and anxiety were among the highly-ranked co-morbidities for back pain and pain in the extremities among women (Bingefors & Isacson, 2004). Research suggests that psychological factors may cause pain conditions or are expressed as pain (Von Korff, Dworkin, Le Resche, & Kruger, 1988). It is also suggested that pain may cause mental health problems and that conditions such as depression may share common pathogenic mechanism with pain manifestation (Breslau, Davis, Schultz, & Paterson, 1994).

Musculoskeletal pain may often manifest as widespread pain along with LBP. While, widespread pain preceding LBP is a strong predictor of chronic LBP, repeated incidences of acute LBP are known to evolve gradually into widespread pain conditions (Natvig, Bruusgaard, & Eriksen, 2001). Such manifestations of pain associated with LBP may include neck pain, leg pain, sciatica, arm pain, muscle

spasms or stiffness. LBP may present as a symptom of fibromyalgia syndrome, which is a long-standing condition in which patients often self-report multitude of symptoms such as weakness, fatigue and stiffness (R. S. Weiner, 2001). Further, fibromyalgic patients may also report symptoms of Irritable Bowel Syndrome (IBS), which is characterised by nausea, weakness, fatigue and back pain as well as other digestive symptoms (Ehrlich, 2003). Even without the presence of fibromyalgia, those suffering from IBS may experience the above symptoms (Thompson, Heaton, Smyth, & Smyth, 2000). In addition, sciatica, a painful condition caused by compression of a nerve root in the lower back, manifests as back pain associated with radiating pain to the lower extremities and the sensation of pins and needles (Konstantinou & Dunn, 2008). Back pain is associated with many other conditions and those suffering from back pain may not only consult a medical practitioner or a physiotherapist for their back pain, but also use over the counter medication for a range of symptoms associated with back pain.

Therefore, it is important to understand back pain sufferers' use of health care system for back pain in co-relation to a range of back-pain related symptoms. This thesis, analyses the prevalence of medical practitioner consultations for back-pain related symptoms, factors associated with back pain sufferer's choice of medical practitioners for back pain related symptoms.

1.7.9 Economic influences on back pain care

Back-pain care has been shown to pose a significant economic burden on individuals and healthcare systems in order to cover diagnostic costs, health care interventions and disability compensation. Chronic back pain care in particular accounts for the highest consumption of economic resources (Maetzel & Li, 2002). In

the absence of definitive clinical guidelines for back-pain care, the costs toward computerised tomography (CT) or other diagnostic imaging, as well as treatments, may often increase the overall economic burden of back-pain care (Maetzel & Li, 2002). Back pain care involves both direct and indirect costs. While direct costs are for diagnosis, hospital care, rehabilitation, ancillary treatments including medical and allied health, the indirect costs comprise loss of earnings and loss of productivity (B. Walker, Muller, & Grant, 2003). Despite public health and private health cover for costs associated with back-pain care, back-pain sufferers not only rely on their GPs for care but concurrently explore a range of other back-pain care options, which incur out-of-pocket expenditure. The various components of back pain-care seeking comprise, firstly, visits to a GP, purchase of medications, follow up consultations. Secondly, diagnostic tests. Thirdly, visits to physiotherapists and/or allied health care professionals. Fourthly, besides specialist consultations, many back-pain sufferers purchase over-the-counter pain management products.

1.8 Overview of the Australian healthcare system

As context for this thesis, Medicare is Australia's universal healthcare scheme primarily subsidises medical costs for citizens and permanent residents. Healthcare in Australia is also provided by private medical practitioners and by private or public hospitals paid by the private insurance or government agencies, and the balance by the patient (Australia, 2010). Medicare users receive a benefit against healthcare costs for visiting a GP and medical specialists, medical investigations, and surgical interventions. On the other hand, Medicare provided rebates for consulting a Medicare registered allied health practitioners such as physiotherapists. Referral from a GP is required for users to claim the rebate for allied healthcare visits.

Medicare provides rebates for a capped number of GP referrals each year, additional visits must be paid out of pocket or by the user's private insurer, which may lead to an increase in premium costs. In the Medicare framework GPs are the primary contact healthcare providers, facilitating access to other health and related services and coordinating care for those with complex and chronic care needs. This is consistent with findings of other studies that also reported that GP's were the primary source of contact (Becker et al., 2010; Picavet, Struijs, & Westert, 2008). GP services are covered by the universal healthcare scheme in Australia, with GP's as the primary healthcare providers and a gateway to the healthcare system. GP's are pivotal in referring patients to medical specialists and allied healthcare services such as physiotherapy.

1.9 Overview of back-pain care provision and providers in Australia

Back-pain sufferers can draw upon a wide range of possible treatment providers in Australia who can be identified as comprising three main provider categories: Medical practitioners ` those core to the biomedical model and medical curriculum. These include: GPs, orthopaedic specialists, neurologists and rheumatologists (B. F. Walker, Muller, & Grant, 2004c; Xue et al., 2008). Allied health care practitioners those associated with the biomedical model and who traditionally closely assist the medical profession in service provision. These include physiotherapists, nurses and pharmacists (Broom, Kirby, Sibbritt, Adams, & Refshauge, 2012).

1.9.1 Medical back-pain care provision

Most of the back pain sufferers in Australia seek help from a GP and less than 5% have a follow-up visit with a medical specialist (B. F. Walker, Muller, & Grant,

2004a). 35% of mid-aged Australian women who suffered from back pain consulted a medical practitioner (Broom et al., 2012).

1.9.2 General practitioners (GP)

Healthcare system in Australia is designed having GP as a primary contact. The 2012 census on general practice indicated that there are 79,653 practicing GPs in Australia (Australian Institute of Health and Welfare, 2014). A survey in 2011 found that 13% of Australians had visited a GP at least once in the previous 12 months, 64% had visited at least twice, 47% had visited four times or more (Australian Bureau of Statistics, 2014). GPs' services cover most of their patients' healthcare needs including, diagnosis, prescription of medicines, treatments for management of symptoms and referral to specialists or other health services. GPs visits in Australia are funded by Medicare; covering 85% of individuals' costs, unless the individual is bulk billed.

1.9.3 Medical Specialist

As discussed earlier 5% of back pain sufferers visit a medical specialist. In Australia care for back pain is mainly provided by orthopaedic specialists, neurologists and rheumatologists.

1.9.3.1 Orthopaedic Specialists

The role of an orthopaedic specialists is limited to conditions pertaining to the musculoskeletal system including bones, joints, muscles, ligaments and tendons. The approaches adopted by an orthopaedic specialist are providing medical, physical, rehabilitation support and surgery when required. Orthopaedic specialists receive referrals from GPs especially when further medical investigations are necessary and/or when there is a need for surgery. Patients are referred to an orthopaedic specialist by GPs especially when back pain is associated with spinal

injuries and/or where surgery is recommended (Australian Institute of Health and Welfare, 2014).

1.9.3.2 Neurologist

In the case of musculoskeletal injuries associated with neurological damage (e.g. vertebral disc prolapses causing compression of spinal cord) GPs refer patients to a neurologist (Kleinig et al., 2011). Generally, neurologists are specialised in treating neurological conditions related to the brain and spinal cord. However, patients with neural conditions affecting their muscles are referred to a neurologist. In Australia, individuals with back pain present when neurological signs and symptoms GPs refer them to a neurologist for further assessment and treatment (Australian Institute of Health and Welfare, 2014).

1.9.3.3 Rheumatologists

Rheumatologists attend to individuals presenting with conditions associated with joints, muscles and bones such as arthritis, autoimmune connective tissue disease, spinal disorders, soft tissue disorders, osteoporosis and chronic musculoskeletal pain conditions (Australian Rheumatology Association, 2017). GPs refer patients to a rheumatologist when back pain sufferers present with pain associated with inflammation (Boonen et al., 2005).

1.10 Medical back pain care treatments

Individuals visiting a GP with a non-specific low back pain (90% of all patients with back pain), the clinical guidelines for the management of back pain even though has some variation in diagnosis and treatment by GPs and specialist but generally similar across many countries. most common type of back pain (representing is met with some variations in diagnosis and treatment by GPs and specialists despite a general

consensus about the clinical guidelines for the management of back pain within, and between, countries (B. Koes, Van Tulder, & Thomas, 2006; B. W. Koes et al., 2010).

1.11 Medical prescriptions

The clinical guidelines for the management of acute or sub-acute and chronic back pain can suggests a multidisciplinary treatments that includes exercise and behavioural therapy along with prescription of medication (Chou & Huffman, 2007b; B. Koes et al., 2006). Prescription of medication is the most common approach adopted by GPs and Specialists (Chou & Huffman, 2007a). Commonly prescribed/used medications in back- pain care including prescription only and medications available for purchase over-the-counter. The prescriptions for back pain include analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, opioids and antidepressants (Dagenais, Tricco, & Haldeman, 2010).

1.11.1 Analgesic

The commonly prescribed analgesic is acetaminophen generically known as paracetamol, even though the current clinical guidelines do not recommend the use of paracetamol it is widely prescribed in the management of back pain for its pain-relieving property with few side effects (R. A. Davies, Maher, & Hancock, 2008). In more recent times the clinical guidelines recommend the use of Non-steroidal anti-inflammatory drugs (NSAIDs) in the management of back pain (B. W. Koes et al., 2010).

1.11.2 Non-steroidal anti-inflammatory drugs and muscle relaxants

Some commonly used over the counter, as well as prescription NSAIDs, in Australia include aspirin (in brands such as Disprin), ibuprofen (in brands such as Nurofen), naproxen (in brands such as Naprosyn), diclofenac (in brands such as Voltaren) and

celecoxib (in brands such as Celebrex) (National Institute of Neurological Disorders and Stroke, 2017). Generally, NSAIDs are used when back pain is not relieved by paracetamol (B. W. Koes et al., 2010). Study have found that NSAIDs are effective in the management of intense back pain (Chou & Huffman, 2007a). Muscle relaxants are extensively use in the treatment of non-specific back pain, clinical guidelines in many European countries recommend the use of muscle relaxants (B. W. Koes et al., 2010). However, in Australia muscle relaxants are not a preferred recommendation for back pain (P. Brooks et al., 2003).

1.11.2.1 Role of NSAIDs and muscle relaxants and their side-effects

Until 2000, clinical guidelines around the world for back-pain care recommended paracetamol as the first line of treatment (B. W. Koes, van Tulder, Ostelo, Burton, & Waddell, 2001). Although non-steroidal, anti-inflammatory drugs (NSAIDs) have been given prominence in more recently published clinical guidelines, paracetamol is still often mentioned as a useful drug in acute back pain and a drug of choice for short periods in chronic low back pain (R. A. Davies et al., 2008). NSAIDs are used as second choice in back-pain care in cases where paracetamol is not sufficient (B. W. Koes et al., 2010). A systematic review of paracetamol for non-specific low back pain found that the effect of paracetamol treatment on pain outcomes was not statistically significant for acute as well as chronic back pain (R. A. Davies et al., 2008). Cochrane review found that short-term use of NSAIDs was effective in acute low back pain and did not require additional analgesics (Chou & Huffman, 2007a). In chronic back pain, ibuprofen was found to be effective (Chou & Huffman, 2007a). There is little data on long-term benefits and harms associated with use of NSAIDs in low back pain and studies report that use of NSAIDs was no more effective than non-pharmacological interventions such as physical therapy or spinal manipulation

(Chou & Huffman, 2007b). Further, Muscle relaxants such as dantrolene, baclofen, tizanidine have shown to be efficacious in acute low back pain, and skeletal muscle relaxants have shown to be slightly superior to placebo for short-term use (Chou & Huffman, 2007a). However, skeletal muscle relaxants are known to be associated with a number of side effects (Chou & Huffman, 2007a).

1.11.3 Opioids, antidepressants and other therapeutic recommendations

Opioids are a preferred choice in most developed countries in the management of back pain. However, countries like New Zealand do not recommend the use of opioids for the management of back pain (Ministry of Health, 2011). One study showed very low quality evidence that opioids had no difference in pain relief or improvement in functional ability compared to another NSAID (i.e. naproxen) (Jamison, Raymond, Slawsby, Nedeljkovic, & Katz, 1998). On the other hand, a study found that 85% of LBP patients reported adverse events such as constipation and sedation (Hale, Dvergsten, & Gimbel, 2005).

Antidepressants are prescribed to individuals with back pain when there are clear signs of depression (B. W. Koes et al., 2010). However, Australian clinical guidelines for the management of back pain do not recommend the use of antidepressants (P. Brooks et al., 2003). One systematic review found antidepressants to be more effective than placebo for pain relief in chronic low back pain (Salerno, Browning & Jackson, 2002). However, antidepressants for LBP have been reported to be associated with higher risk for adverse effects compared to placebo and the adverse effects commonly include dry mouth, drowsiness, dizziness and constipation (Chou, Roger & Huffman, Laurie Hoyt, 2007).

Clinical guidelines on LBP encourage patients to progressively be physically active and strictly discourage long-term bed rest (B. W. Koes et al., 2010). Manipulation therapies like spinal manipulations are recommended for patients who do not respond to other treatments, particularly in the European countries like Austria, Italy, Netherlands and UK (Chou & Huffman, 2007b; B. W. Koes et al., 2010). However, Australia does not recommend manipulative therapy but encourages physical activity (B. W. Koes et al., 2010).

1.11.4 Invasive procedures

Invasive procedures for back pain like injection of corticosteroid and analgesic into the joint facets for pain relief but not recommended for individuals with non-specific back pain (van Tulder, Koes, & Bouter, 1995). Surgical intervention is consider among individuals with back pain associated with degenerative joint conditions changes like degenerative lumbar spondylosis (B. W. Koes et al., 2010).

Overall, many patients with back pain consult GPs, a small proportion of back pain sufferers are treated by specialist doctors, and back pain sufferers take analgesics, NSAIDs and/or opioids for pain relief. A certain subgroup of patients may also undergo invasive treatments such as joint facet injections and surgical interventions. Many back pain sufferers also receive information on being active and use of exercise from medical practitioners. Further, Australian GPs refer patients to physiotherapist and CAM practitioners like acupuncturists and chiropractors (Cohen, Penman, Pirotta, & Costa, 2005; D. Sibbritt et al., 2016).

1.12 Allied healthcare for back pain

As already discussed, allied healthcare providers for back pain include physiotherapists, nurses, and pharmacists.

1.12.1 Physiotherapists

Physiotherapists in Australia use physical treatments to manage a range of movement disorders and assist their patients in regaining optimal function (Australian Physiotherapy Association, 2017). Physiotherapists are trained to support patients with musculoskeletal conditions (Australian Physiotherapy Association, 2017). According to 2011 census there about 20,081 physiotherapists in Australia (Australian Bureau of Statistics, 2014). An Australian population based study revealed that 54.2% of Australian women with back pain had visited a physiotherapist for their back pain (D. Sibbritt et al., 2016). Another similar Australian study has reported that 8% of adults have primarily approached a physiotherapist for their back pain (B. F. Walker et al., 2004a). Physiotherapists focus on assessing back pain sufferers with exercise therapy and educate patients on physical activity and active lifestyle (Bekkering et al., 2003). Studies have shown that patient education on back pain care reduces disability and improves the quality of life (Moseley, 2002).

1.12.2 Practicing nurse and Pharmacists

Other allied healthcare workers in Australia include practicing nurse, pharmacists. Practicing nurses and pharmacists play a key role in the back pain care. Practicing nurses in Australia are able to prescribe schedule 2 drugs like paracetamol, as well as, advise patients on self-care for back pain and educate patients about the invasive procedures (Hartley, Neubrander, & Repede, 2012). On the other hand, pharmacists in Australia play an important role in dispensing prescriptions, counselling customers on over-the-counter medications and educating customers on prevention and health promotion (Pharmaceutical Society of Australia, 2017). Pharmacists work as consultant pharmacists, community pharmacists or hospitals,

as well as, provide over-the-counter analgesics and NSAIDs (where appropriate) for customers with back pain. Pharmacists are readily accessible without prior appointments during working hours and are well positioned to offer product information and/or advice and refer patients for back pain care (Silcock, Moffett, Edmondson, Waddell, & Burton, 2007). (Silcock et al., 2007).

Overall, allied healthcare workers give information on self-care for back pain, advice on activity/exercise, prescribe/counsel on pain relieving medications (mainly nurses and pharmacists), offer physical treatment (mainly physiotherapists) for improving the quality of life for individuals suffering from back pain.

1.13 The use of complementary and alternative medicine for back pain

Australian individuals experiencing back pain seek help from CAM practitioners (Xue, Zhang, Lin, Da Costa, & Story, 2007). A largest Australian longitudinal study reported women with long term back pain self-prescribed CAM treatments alongside medical treatments (D. W. Sibbritt & Adams, 2010b). An Australian study reported that 76% of Australian women aged 60-65 years in the year 2010 consulted a CAM practitioner including for back pain advice (Murthy et al., 2014a). It is a common practice in the west to visit an acupuncturist, a chiropractor or massage therapist for back pain (Côté, Cassidy, & Carroll, 2001; Murthy et al., 2014a). Internationally the use of herbal medicines, vitamins/minerals and/or supplements by back pain has been reported (Murthy et al., 2014a). Studies on the efficacy of CAM therapies for back pain reported massage therapy to be effective over osteopathy and acupuncture (Cherkin, Sherman, Deyo, & Shekelle, 2003).

CAM treatments are perceived to be “natural” and having less adverse effects (Millar, 2001; Palinkas, Kabongo, & Network, 2000; Shmueli, Igudin, & Shuval,

2011). Furthermore, dissatisfaction with medical care, long waiting period and lack of accessibility are some of the reasons for individuals with back pain to approach a CAM practitioner (Kirby, Broom, Sibbritt, Adams, & Refshauge, 2013).

1.14 Integration of healthcare options for back pain

Individuals with back pain utilise medical medical, allied healthcare and CAM practices (Haetzman, Elliott, Smith, Hannaford, & Chambers, 2003; Murthy et al., 2014a; Xue et al., 2007). A study of women US reported 41% of participants suffered from back pain and 34% utilised CAM for their condition (Wade, Chao, Kronenberg, Cushman, & Kalmuss, 2008). According to an Australian survey individuals with back pain who approach a GP for treatment are more likely to visit a chiropractor or acupuncturist (Xue et al., 2007) when compared with those who do not approach their GP. While there is cultural and political diversity inducing CAM use globally, chiropractic, massage, acupuncture, and osteopathy appear to be the most commonly utilised CAM therapies for treating back pain (Côté et al., 2001; Xue et al., 2007). However, the extent of integration of all the healthcare options and healthcare providers is unknown.

2. Literature review

2.1 Chapter Introduction

The aim of the review was to examine the current prevalence, pattern, and use of medical and allied healthcare services among people with back pain. The purpose of this chapter is to provide a detailed overview of the current international literature on the use of medical, allied and CAM health care for back pain further to what has already been identified as the key issues in the Background Chapter. A comprehensive search of literature between the years 2000 and 2015 was undertaken in light of medical, allied and other healthcare utilisation among individuals with back pain.

2.2 Search design

MEDLINE, CINHAL, DARE, EBSCO, AMED, SCOPUS and PubMed databases were searched, using the following search terms: back OR “back pain" OR "lumbar" OR "spinal" OR "low back ache" OR "disc prolapse" OR "sciatica" OR "vertebra*" OR "GPs" OR "medical specialists" OR "allied medicine" OR "allied healthcare" OR "physiotherapy". The CINHAL, MEDLINE, DARE, EBSCO, SCOPUS, and PubMed are the most popular databases for health scholarship. The AMED database was chosen as an important resource on allied health scholarship. The database search was confined to peer-reviewed articles published in the English language.

The search results were imported into Endnote X7 (Thomson Reuters, New York, NY, USA), a bibliographic management system software program. All duplicate items

were removed, and the remaining papers were screened and assessed by titles and abstracts. The criteria for inclusion in the review were: peer-reviewed articles, research-based articles presenting empirical findings with a focus on medical and allied healthcare use among people with back pain, or medical and allied healthcare use amongst a broader population where medical and allied healthcare use for back pain was clearly identifiable. Individual case reports and medical and allied healthcare clinical trials on back pain were excluded from the review. In circumstances where the abstract is insufficient in providing sufficient detail on the paper, the full article was retrieved and examined to make a final decision regarding inclusion or exclusion of such papers for the review.

2.3 Introduction

Back pain is one of the common and debilitating non-communicable disorders with an average lifetime prevalence of 70% (Murthy et al., 2014a; Nachemson, Waddell, & Norlund, 2000; B. F. Walker, Muller, & Grant, 2004b; Webb et al., 2003). The likelihood of its recurrence and chronicity it significantly reduces the quality of life of individuals with back pain (Andersson, 1999; Chou et al., 2007; B. Koes et al., 2006; Pillastrini et al., 2012). Due to lack of effective management interventions (B. Koes et al., 2006; Pillastrini et al., 2012) back pain poses major constraints on individuals, health systems and social care systems across developed countries (P. M. Brooks, 2006; D Hoy et al., 2010; Juniper, Le, & Mladsi, 2009; Maniadakis & Gray, 2000; van Tulder et al., 1995; Woolf & Pfleger, 2003). In Australia alone, the direct and indirect economic burden exceeds $AUD 9.17 billion per annum (Buchbinder, Jolley, & Wyatt, 2001; Economics, 2001).

2.4 Prevalence/incidence

Back pain affects a large proportion of the adult population (B. F. Walker et al., 2004b) and is the most prevalent musculoskeletal conditions (P. M. Brooks, 2006; Woolf & Pfleger, 2003). Back pain is the second most common complaint in general practice (Broom et al., 2012; Haetzman et al., 2003) and unresolved back pain results in reduced physical function and psychological distress (Furlan et al., 2005). Hence back pain sufferers tend to explore a wide range of healthcare options. Women and individuals with previous history of back pain, individuals with severe back pain and suffering from disability from back pain are more likely to seek help (Ferreira et al., 2010). Back pain sufferers consult medical, allied and CAM practitioners (Cohen et al., 2005; Haetzman et al., 2003; Licciardone, Brimhall, & King, 2005; Rainville, Bagnall, & Phalen, 1995; Tulder, Scholten, Koes, & Deyo, 2004; Williams et al., 2009).

2.4.1 Healthcare utilisation among women with back pain

There is increasing evidence that women with back pain tend to be also higher users of medical care, studies reported that US women consult a medical practitioner for their back pain care (Burke, Upchurch, Dye, & Chyu, 2006; Wade et al., 2008).

2.4.2 Healthcare utilisation among Australian women with back pain

In Australia, women with back pain utilise a range of healthcare services that include medical healthcare services (General Practitioners and Medical Specialists) and allied healthcare services (Physiotherapists) (Kirby, Broom, Sibbritt, Adams, et al., 2013; Kirby, Broom, Sibbritt, Refshauge, & Adams, 2013; D. W. Sibbritt & Adams, 2010a). Previous reports have focused on the prevalence of CAM use and associated factors amongst a random selection of the national population (Murthy et

al., 2014a, 2014b; Murthy, Sibbritt, & Adams, 2015; Steel et al., 2012). Studies have found an increase in the use of CAM (Adams et al., 2013; Barnes, Bloom, Nahin, & Statistics, 2008). But little is known about the integration of healthcare options (medical and allied healthcare) utilised specifically by women with back pain.

2.5 Referral practices

GPs are the primary source of referrals to medical specialists and/or physiotherapists (Hensher, 1997; Jørgensen & Olesen, 2001). The main reasons for referring back pain patients to a medical specialist is for surgical or non-surgical advice/intervention (Speed & Crisp, 2005). On the other hand, referrals to a physiotherapist include, pain not resolving in two weeks, inability to work, daily lifestyle affected and having problems with sleep (Pinnington, Miller, & Stanley, 2004). GPs referrals are more cost effective than direct physiotherapist access as it is feasible and acceptable for the back pain sufferers and the general practice could easily recoup the cost for additional physiotherapy visits (Pinnington et al., 2004). It is been reported that the location of the practice and perceived need for therapy influenced the referral process (Jørgensen & Olesen, 2001). A New Zealand study reported that physiotherapists receive a referral from GPs for accident related back pains (Love, Dowell, Salmond, & Crampton, 2004). Suggesting a lot of factors influence GPs to refer back pain sufferers to a physiotherapist.

2.6 CAM use for back pain

Furthermore, in the recent years studies have reported a persistent growth in the use of CAM for back pain care (Adams et al., 2013; Barnes et al., 2008). Each year Australians spend over $4 billion on CAM and visit CAM practitioners almost as

frequently as they do conventional medical (Xue et al., 2007). Individuals with back pain utilise CAM alongside medical and allied healthcare (Haetzman et al., 2003; Murthy et al., 2014b; Xue et al., 2007). Women are higher users of health services than men and tend to use CAM frequently for musculoskeletal conditions. A US women study reported 41% of participants suffered from back pain and 34% utilised CAM for their condition (Wade et al., 2008). However, very little is known about the attitudes of medical and allied healthcare practitioners towards CAM practitioners with regards to back pain care. Moreover, the extent of integrations among all the healthcare options available for back pain care is unknown. All the studies on the effectiveness of integration treatments for back pain (medical, allied, and CAM) remain inconclusive (Barnes et al., 2008; Cherkin et al., 2003; Critchley, Ratcliffe, Noonan, Jones, & Hurley, 2007; Eisenberg et al., 2007; Foster, Thompson, Baxter, & Allen, 1999; Gracey, McDonough, & Baxter, 2002; Molsberger, Zhou, Arndt, & Teske, 2008; Tekur, Singphow, Nagendra, & Raghuram, 2008).

2.7 Conclusion

There is a lack of detailed empirical investigation regarding the integration of medical and allied healthcare utilisation among Australian women with back pain. The proposed research will investigate the prevalence of medical and allied healthcare utilisation and integration of healthcare options among Australian women suffering from back pain, drawing upon data collected as part of a national representative sample of Australian Longitudinal Study on Women's Health (ALSWH) survey. Through an examination of women's healthcare use, this study will provide novel empirical insight into the use of medical and allied healthcare integrations among the

practices in back pain care. This will provide valuable current information regarding the use of healthcare practices in back pain care and its implications for women's health and well-being.

The results from this study will provide important insights of interest and benefit to patients, practitioners and policy makers. Further, understanding and analysis of issues around medical and allied healthcare use are essential for determining the need for and the nature of initiatives by governments and healthcare agencies to enhance the safety, quality and effectiveness of health service provision and organisation (for medical healthcare and allied healthcare practices/practitioners). Therefore, in its methodology, this study adopts a HSR approach to critically examine the Australian women’s use of integrated medical healthcare for back pain.

Therefore, this research firstly examines the prevalence of medical and allied healthcare utilisation usage amongst Australian women with back pain. Secondly, it examines the back pain characteristics among Australian women with back pain. Finally, the integration of healthcare options between medical and allied healthcare utilisation were examined. The research informs the healthcare providers and policy makers the current trends of medical and allied healthcare utilisation among women with back pain and the prevalence of integration among the medical and allied healthcare services.

3. Methodology

The purpose of this chapter is to provide an outline of the methodology employed in this study. The study will have two main components: 1) to examine the literature on the use of medical and allied healthcare utilisation for back pain through a literature review, and 2) to conduct an empirical examination of the use of medical healthcare services and allied healthcare services use by back pain sufferers. This second component utilises data from the ALSWH survey to examine the integration of healthcare options for back pain amongst Australian women, in particular the use of medical and allied health care. The analyses firstly will examine the characteristics of Australian women who consulted medical and allied healthcare practitioners back pain care; and secondly, it investigates the integration among medical and allied healthcare services for back pain care.

3.1 Empirical examination

This study conducts an empirical examination of the use of medical healthcare services and allied healthcare services among Australian women suffering from back pain. This section provides an overview of the methods employed in the empirical examination of the use of integrated healthcare options for back pain through a sub-study from the ALSWH survey. This study employs a quantitative design using a cross-sectional postal survey. The survey draws upon a nationally representative sample of Australian women, which identifies relevant factors that examine women's use of medical and allied healthcare services for back pain.

3.2 Sample

The ALSWH was designed to investigate multiple factors affecting the health and well-being of women over a 20-year period (Brown et al. 1999). Women in three age groups (‘young' 18-23 years, ‘mid age' 45-50 years and ‘older' 70-75 years) were randomly selected from the national Medicare database and invited by mail to participate in the baseline survey in 1996 (Brown et al. 1999). The respondents have been shown to be broadly representative of the national population of women in the target age groups (Brown et al, 1999). The focus of this sub-study is women from the 45-50 years' cohort (i.e. born in 1946-51), of which there were 10,011 women in the ALSWH survey conducted in 2010 (survey 6). There were 1,851 women across Australia who have reported that they experienced back pain. In 2011, the sub-study questionnaires were mailed to these women. Of the 1, 851 women, 5 drop outs from ALSWH survey, 2 were deceased, 34 women elected not to participate in the sub-study, 1 was overseas and 92 women were ineligible as they did not suffer from back pain at the time of the survey. A total of 1,310 women (response rate 80.8%) completed the survey.

3.3 Healthcare utilisation

The women were provided with a list of medical practitioners (i.e. GP, orthopaedic specialist, neurologist, and rheumatologist) and allied health practitioners (i.e. physiotherapist) and asked how many times they consulted any of them for back pain during the previous 12 months.

The women were also asked to nominate the reasons that were important in their decision to consult medical and allied healthcare practitioners. The list of reasons included: pain relief; to improve mobility; to improve function; relaxation or stress

relief; and general well-being. In terms of the care received by medical and allied healthcare practitioners, the women were asked to rate (i.e. excellent, very good, good, fair, poor) their: access to medical and allied healthcare practitioners if they need one; access to female medical and allied healthcare practitioners; length of wait to get a medical and allied healthcare practitioners' appointment; and quality of care received by their medical and allied healthcare practitioners.

3.4 Back pain

The women were asked to indicate the amount of time (years) they had back pain and how frequently they experienced the back pain, in the previous 12 months. They were also asked to rate the intensity of their typical back pain in the previous 12 months out of 10 (where 0=no pain and 10=worst possible pain).

3.5 Ethics

Ethics approval (2015000249) for this analysis from ALSWH was gained from the University of Technology Sydney on 3rd June 2015.

Expression of Interest (EoI) approval (#A544) was gained on 16th September 2014 from the ALSWH Publications, Sub-studies

3.6 Questionnaire

The questionnaire was developed through the collaboration of a multi-disciplinary team including experts in conventional medicine, complementary and alternative medicine, biostatistics and epidemiology. The questionnaire had 50 questions and some questionnaire items were based on survey questions used previously in other ALSWH studies (Women's health Australia 1996; Women's health Australia 2007; Women's health Australia 2009). Following are the questions included in this study:

- **Back pain, its intensity, and chronicity.** Women were asked about how long they have had back pain, the frequency of back pain (never, rarely, intermittently, regularly or continuously) (see appendix 2) (Question 2). Women were asked about the intensity of pain at its worst, at its best and at an acceptable level in the previous 12 months. A 10-point Likert scale, where 1 = 'no pain' and 10 = 'worst possible pain' was used to indicate the intensity of back pain.
- **Health service utilisation including consultations with allied health practitioners.** The response categories included a physiotherapist, occupational therapist, nurse, pharmacist and any other (see appendix 2) (Question 9). Likert scale was used for indicating the frequency of visits as none, 1 or 2 times, 3 or 4 times, 5 or 6 times and 7 or more times.
- **Health service utilisation including consultations with medical practitioners.** The response categories included a general practitioner, medical specialists (orthopedic specialist, neurologist, a rheumatologist and any other) (see appendix 2) (Question 11). Likert scale was used for indicating the frequency of visits as none, 1 or 2 times, 3 or 4 times, 5 or 6 times and 7 or more times.
- **Demographic characteristics.** The marital status, urban/rural residence, highest educational qualification the participants had completed and their spending ability with regard to medical and allied healthcare utilisation as reported in the baseline survey during 2010 (see appendix 1) was utilised to extrapolate the demographic characteristics in this sub-study. Postcode of residence at the time of sixth ALSWH survey (2010) was utilised to classify a

woman’s area of residence as urban or non-urban according to the Australian Standard Geographical Classification (ASGC) (Australian Institute of Health and Welfare, 2016). Based on the distance by road to the nearest service center, SGC classifies areas of residence as ‘major cities', ‘inner regional', ‘outer regional', ‘remote' and ‘very remote'. The ASGC categories of remote and very remote were combined for the ALSWH surveys, as the number of participants in these two areas was low. Therefore, the ALSWH classify the areas of residence as ‘major cities', ‘inner regional', ‘outer regional' and ‘remote/very remote'. For the purpose of this thesis, ‘urban' represents a combination of ‘major cities', ‘inner regional' and ‘outer regional' and ‘rural' represents ‘remote/very remote'.

Women were asked about their marital status (see appendix 1) (Question 110) married (registered), de facto relationship (opposite sex), de facto relationship (same sex), separated, divorced, widowed, never married). Women were also asked about their highest educational qualifications completed (see appendix 1) (Question 108) no formal qualifications, school or intermediate certificate or equivalent, high school or leaving certificate or equivalent, trade/ apprenticeship, diploma, university degree, higher university degree). Women were asked about their ability to manage on their available income (see appendix 1) (Question 99) 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 to manage on available income).

3.7 Statistical analyses

Descriptive statistics are employed including frequencies and percentages. Pearson's chi-square tests are used to compare categorical variables. For multivariate analyses, a logistic regression has been performed. All analyses are conducted using the statistical software package STATA 13.1.

Analysis of demographic characteristics including marital status, urban/rural residence, educational level and income were extrapolated from the 2010 survey. Prevalence estimates for healthcare utilisation are calculated with 95% confidence intervals. These include visits to GPs, medical specialists (orthopaedic specialist, neurologist, rheumatologist) and allied healthcare practitioners (physiotherapists, occupational therapists, nurses, pharmacists). Prevalence estimates for visits to medical practitioners is calculated with 95% confidence intervals. These include GPs, orthopaedic specialist, neurologist, a rheumatologist.

The bivariate association between the consultation with a medical practitioners' variable and various categorical variables were assessed using a chi-squared test. Multivariate regression models (logistic) is used to test for differences between back pain characteristics (while adjusting for demographic characteristics including socio economic status, ethnicity, and rural or urban place of residence) of women's healthcare options use for back pain as model predictors against each research question (model outcomes).

Two logistic regression models were utilised: 1) a logistic regression model with consultation with a healthcare practitioners' (GPs, medical specialists and physiotherapists) as the dependent variable and back pain frequency, years with

back pain, and back pain intensity as the independent variables, as well as the confounder variables of area of residence, education, marital status and income; and 2) a logistic regression model with consultation with a healthcare practitioners' (GPs, medical specialists and physiotherapists) as the dependent variable and consultation with healthcare practitioners (GPs, medical specialists and physiotherapists) as the independent variables, as well as the confounder variables of area of residence, education, marital status and income. All analyses were conducted using the statistical software Stata, version 13.1.

4. Results

4.1 Chapter introduction

The results presented in this chapter are based on analyses of data obtained from the ALSWH sub-study. Information on the ALSHW has been provided in chapter 3. This chapter provides results of the healthcare utilisation among Australian women aged 59.64 years for their back pain. A detailed analysis of Australian women utilisation of medical (GP and medical specialists) and allied (physiotherapist) healthcare services is presented in this chapter.

4.2 Demographic characteristics

There were 1,310 women in the study, *Table 1* presents the demographic characteristics of the participants. 56% of participants reside in the rural Australia, 40% reside in urban cities and 4% reside in remote areas. In relation to education 47% had at least high school qualification, 20% had trade/diploma qualification, 16% had tertiary qualification and 17% had no formal qualification. Considering the marital status, 73% of the participants where married or defacto relationship, 24% where either separated or divorced or widows and 3% were single.

4.3 Consulting a healthcare practitioner

Table 2 presents the women's consultation with healthcare practitioners 56.5% (n=738) consulted a GP, 16.2% (n=213) consulted a medical specialist (orthopaedic specialist or neurologist or rheumatologist) and 37.3% (n=488) consulted a physiotherapist for their back pain in the previous 12 months. 26% (n=327) consulted a GP 1-2 times, 16.5% (n=208) consulted a GP 3-4 times, 7.3% (n=92) consulted a GP 5-6 times, and 8.8% (n=111) consulted a GP 7 or more times.

Table 1: Demographic characteristics of the participants

Demographic characteristics		Participants (n=1310)
		%
Area of Residence	Urban	40
	Rural	56
	Remote	4
Education	No formal	17
	High School	47
	Trade/Diploma	20
	Tertiary	16
Marital Status	Married/Defacto	73
	Separated/Divorced/Widow	24
	Single	3

Table 2: Women's consultation with a healthcare practitioner

	General Practitioner %	Medical Specialist %	Physiotherapist %
Consulting	**56.5**	**16.2**	**37.3**
1-2 times	26	18.8	13.1
3-4 times	16.5	5.7	9.4
5-6 times	7.3	1.1	5.8
7 or more times	8.8	1.1	9
Order of consultation			
1st practitioner	74.6	7.1	21.7
2nd practitioner	12.7	56.7	35.7
3rd practitioner	6.7	17.1	24.9
4th practitioner	2.3	7.4	11.6
5th – 8th practitioner	3.2	11.4	6.1

Similarly, 8.6% (n=80) consulted an orthopaedic specialist 1-2 times, 2% (n=19) consulted an orthopaedic specialist 3-4 times, 0.4% (n=4) consulted an orthopaedic specialist 5-6 times, and 0.3% (n=3) consulted 7 or more times. 4.2% (n=38) consulted a neurologist 1-2 times, 1.3% (n=12) consulted a neurologist 3-4 times,

0.1% (n=1) consulted a neurologist 5-6 times, and 0.4% (n=4) consulted 7 or more times. 6% (n=54) consulted a rheumatologist 1-2 times, 2.4% (n=22) consulted a rheumatologist 3-4 times, 0.6% (n=6) consulted a rheumatologist 5-6 times, and 0.4% (n=6) consulted 7 or more times. Furthermore, 13.1% (n=171) consulted a physiotherapist 1-2 times, 9.4% (n=123) consulted a physiotherapist 3-4 times, 5.8% (n=76) consulted a physiotherapist 5-6 times, and 9.0% (n=118) consulted 7 or more times.

4.4 Consultations with a GP and a medical specialist

In terms of the order in which the (n=738) women consulted a GP for their back pain, a GP was the first practitioner consulted by 74.6% of the women; the second practitioner consulted by 12.7% of the women; the third practitioner consulted by 6.7% of the women; the fourth practitioner consulted by 2.3% of the women; with the remaining 3.2% of women consulting a GP as the fifth to eighth practitioner. On the other hand, the order in which the (n=213) women consulted a medical specialist for their back pain, a medical specialist was the first practitioner consulted by 7.1% of the women; the second practitioner consulted by 56.7% of the women; the third practitioner consulted by 17.1% of the women; the fourth practitioner consulted by 7.4% of the women; with the remaining 11.4% of women consulting a medical specialist as the fifth to eighth practitioner.

4.5 Consultations with a physiotherapist

Similarly, in terms of the order in which the (n=488) women consulted a physiotherapist for their back pain, a physiotherapist was the first practitioner consulted by 21.7% of the women; the second practitioner consulted by 35.7% of the women; the third practitioner consulted by 24.9% of the women; the fourth

practitioner consulted by 11.6% of the women; with the remaining 6.1% of women consulting a physiotherapist as the fifth to eighth practitioner. Note that for those women who consulted a physiotherapist, 57% consulted a GP first. For the women that did consult a physiotherapist for their back pain, 45.5% stated that they always consulted a doctor before using physiotherapy, while 24.3% sometimes consulted a doctor before using physiotherapy, 10.0% rarely consulted a doctor before using physiotherapy, and 20.2% never consulted a doctor before using physiotherapy.

4.6 Back pain related symptoms/conditions for consulting a GP and a medical specialist

A GP and/or a medical specialist was consulted by the women for the following symptoms/conditions related to their back pain: back pain (56.2%); leg pain or sciatica (39.7%); sleeping problems (36.9%); anxiety/tension (27.9%), pins and needles/numbness (27.7%); neck pain (27.6%); fatigue (25.5%); depression (25.1%); muscle spasm (23.6%); headaches/migraines (23.0%); stiffness (21.6); arm pain (19.1%); weakness (15.7%); nausea (12.7%); and instability (7.1%). Note that the women could indicate more than one symptom/condition. Of the 951 women who consulted a GP or a medical specialist, 772 (81.1%) did so for pain relief, 342 (35.9%) for general wellbeing, 314 (33.0%) to improve mobility, 262 (27.5%) to improve function, and 145 (15.2%) for relaxation or stress relief. Note that the women could indicate more than one reason for consulting a GP or a medical specialist.

4.7 Back pain related symptoms/conditions for consulting a physiotherapist

On the other hand, a physiotherapist was consulted by the women for the following symptoms/conditions related to their back pain: back pain (68.0%); neck pain

(45.5%); leg pain or sciatica (39.3%); stiffness (32.2%); muscle spasm (22.3%); arm pain (21.3%); pins and needles or numbness (17.6%); headaches or migraines (13.9%); weakness (8.8%); instability (5.5%); and other problems (14.1%). Note that the women could indicate more than one symptom/condition. Of the 488 women who consulted a physiotherapist, 333 (68.2%) did so for pain relief, 415 (85.0%) to improve mobility, 313 (64.1%) to improve function, 86 (17.6%) for relaxation or stress relief, and 127 (26.0%) for general well-being. Note that the women could indicate more than one reason for consulting a physiotherapist.

4.8 Accessibility to a healthcare practitioner for back pain

Only 9.7% of women rated their access to a medical specialist if they need one as being poor, while 28.3% rated their access as very good and 19.4% excellent. 24.4% rated access to a GP who bulk bills as poor, 15.6% as very good and 9.9% as excellent. Similarly, access to a female GP was considered poor by 12.5%, very good by 21.3% and excellent by 21.7% of women. 6.3% women considered access to a hospital if you need it as poor while 28.5% rated their access as very good and 20.5% excellent. Similarly, access to after-hours medical care was rated poor by 24.4%, very good by 15.6% and excellent by 9.9% of women. Rating about the hours when a GP is available, 12.2% of women rated hours GP available as being poor, while 17.1% rated hours of GP available as very good and 7.7% excellent. Similarly, the amount of time for a GP consultation was considered poor by 6.7%, very good by 27.0% and excellent by 15.3% of women.

The length of wait to get a GP appointment was rated as being poor by 16.7% of women, but very good or excellent by 23.4% of women. 13.8% of women rated number of GPs they have to choose from as poor, while 19.6% rated GPs they could

choose from very good and 10.9% excellent. Similarly, the ease of which they could see a GP of their choice was considered poor by 14.4%, very good by 19.5% and excellent by 10.9%. The women rated the quality of care provided by their GP as being mostly excellent (27.1%) or very good (31.2%). Similarly, rating the technical skills (thoroughness, carefulness, competence) of their GP, 31.7% rated their GPs technical skills as excellent, 32.0% as very good and 1.6% as poor.

4.9 Quality of back pain care

Rating the amount of information sharing by their GP, 4.6% women rated information sharing by their GP was poor, 29.2% was very good and 20.1% was excellent. Similarly, personal manner (courtesy, respect, sensitivity, friendliness) of their GP was considered poor by 0.9%, very good by 31.8% and excellent by 35.7% of women. Rating the outcomes of their medical care (how much they were helped by their GP), 3.7% rated poor outcome, 28.9% as very good and 17.9% as excellent outcome. The majority of women who consulted a GP considered the consultation(s) to be very beneficial (26.2%) or beneficial (18.2%). The remaining women considered the GP consultation(s) to be moderately beneficial (12.5%), of little benefit (4.0%), or of no benefit at all (18.1%). Similarly, reporting on the medical specialist 9.2% of women have found their medical specialist very beneficial, 7.8% of women have found beneficial, 5.2% of women have found moderately beneficial, 7.8% of women have found little benefit, and 59.5% of women did not find their medical specialist beneficial.

4.10 Accessing a physiotherapist for back pain care

When answering the question on access, only 6.2% of women rated their access to a physiotherapist if they need one as being poor, while 28.4% rated their access as

very good and 16.2% excellent. Similarly, access to a female physiotherapist was considered poor by 10.2%, very good by 30.6% and excellent by 20.9% of women. Waiting time to get a physiotherapist appointment was rated as being poor by 8.5% of women, but very good or excellent by 35.4% of women. The women rated the quality of care provided by their physiotherapist as being mostly excellent (30.9%) or very good (36.6%). The majority of women who consulted a physiotherapist considered the consultation(s) to be very beneficial (41.8%) or beneficial (26.6%). The remaining women considered the physiotherapist consultation(s) to be moderately beneficial (16.4%), of little benefit (10.2%), or of no benefit at all (5.0%).

Table 3: The association between consultation with a general practitioner for back pain and back pain characteristics.

Characteristics		Consulted a General Practitioner					
		Yes (n=738)	**No** (n=518)	**p-value**	**Odds Ratio***	**95% C.I.***	**p-value***
		%	**%**				
Back pain frequency	regularly / continuously	73	32	<0.001	3.98	2.83, 5.59	<0.001
	rarely / intermittently	27	68		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		19.72 (13.03)	21.42 (13.15)	0.028	0.999	0.998, 1.00	0.051
Back pain intensity (typical)		5.98 (1.74)	4.34 (1.85)	<0.001	1.42	1.28, 1.56	<0.001

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income.

Table 4: The association between consultation with a specialist for back pain and back pain characteristics.

Characteristics		Consulted a Specialist Yes (n=213) %	No (n=757) %	p-value	Odds Ratio*	95% C.I. *	p-value*
Back pain frequency	regularly / continuously	84	43	0.001	5.66	3.20,9.90	<0.001
	rarely / intermittently	16	57		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		19.48(12.15)	21.14(13.11)	0.1030	0.998	0.997,1.00	0.149
Back pain intensity (typical)		6.27(1.83)	4.82(1.92)	0.001	1.25	1.09.1.42	0.001

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income.

Table 5: The association between consultation with a physiotherapist for back pain and back pain characteristics.

Characteristics		Consulted a Physiotherapist					
		Yes (n=488) **%**	**No** (n=666) **%**	**p-value**	**Odds Ratio***	**95% C.I.***	**p-value***
Back pain frequency	regularly / continuously	63	47	<0.001	1.63	1.17, 2.28	0.004
	rarely / intermittently	37	52		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		20.86(13.45)	20.33(13.05)	0.5096	1.000	0.99, 1.001	0.539
Back pain intensity (typical)		5.51(1.88)	4.97(1.97)	<0.001	1.09	0.99,1.19	0.054

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income.

4.11 Associations between consulting a GP and various back pain characteristics

Table 3 presents the associations between consultations with a GP for back pain within the previous 12 months and various back pain characteristics. A statistically significantly greater percentage of women who consulted a GP had regular or continuous back pain compared to women who did not consult a GP (73% and 32% respectively) ($p<0.001$). Further, after adjusting for the area of residence, education, marital status, and income, women who consulted a GP for their back pain were 3.98 (95% CI: 2.83, 5.59) times more likely to have regular or continuous back pain compared to women who did not consult a GP ($p<0.001$).

Women who consulted a GP had a statistically significantly higher mean typical back pain intensity (mean=5.98, SD=1.74) compared to women who did not consult a GP (mean=4.34, SD=1.85) ($p<0.001$). After adjusting for area of residence, education, marital status and income, women who consulted a GP for their back pain had an 42% higher level of typical back pain intensity (OR= 1.42; 95% CI: 1.28, 1.56) compared to women who did not consult a GP ($p<0.001$)

4.12 Associations between consulting a medical specialist and various back pain characteristics

Table 4 presents the associations between consultations with a medical specialist for back pain within the previous 12 months and various back pain characteristics. A statistically significantly greater percentage of women who consulted a medical specialist had regular or continuous back pain compared to

women who did not consult a medical specialist (84% and 43% respectively) ($p<0.001$). Further, after adjusting for area of residence, education, marital status and income, women who consulted a medical specialist for their back pain were 5.66 (95% CI: 3.24, 9.90) times more likely to have regular or continuous back pain compared to women who did not consult a medical specialist ($p<0.001$).

Similarly, women who consulted a medical specialist had a statistically significantly higher mean typical back pain intensity (mean=6.27, SD=1.83) compared to women who did not consult a medical specialist (mean=4.82, SD=1.92) ($p<0.001$). After adjusting for area of residence, education, marital status and income, women who consulted a specialist for their back pain had an 25% higher level of typical back pain intensity (OR= 1.25; 95% CI: 1.09, 1.42) compared to women who did not consult a medical specialist ($p<0.001$). Note that there was no significant difference between women who did and did not consult a GP and or a medical specialist and the number of years with back pain.

4.13 Associations between consulting a physiotherapist and various back pain characteristics

Table 5 presents the associations between consultations with a physiotherapist for back pain within the previous 12 months and various back pain characteristics. A statistically significantly greater percentage of women who consulted a physiotherapist had regular or continuous back pain compared to women who did not consult a physiotherapist (63% and 47% respectively) ($p<0.001$). Further, after adjusting for the area of residence, education, marital

status, and income, women who consulted a physiotherapist for their back pain were 1.63 (95% CI: 1.17, 2.28) times more likely to have regular or continuous back pain compared to women who did not consult a physiotherapist (p=0.004). Women who consulted a physiotherapist had a statistically significantly higher mean typical back pain intensity (mean=5.51, SD=1.88) compared to women who did not consult a physiotherapist (mean=4.97, SD=1.97) (p<0.001). After adjusting for the area of residence, education, marital status, and income, women who consulted a physiotherapist for their back pain had an 8% higher level of typical back pain intensity (OR= 1.09; 95% CI: 0.99, 1.19) compared to women who did not consult a physiotherapist (p=0.032). Note for number of years with back pain there was no significant difference between women who did and did not consult a physiotherapist.

4.14 Associations between consulting a GP and other healthcare practitioners

The associations between consultation with a GP for back pain and consultations with other healthcare practitioners are presented in *Table 6*. Statistically significant associations were identified between a number of healthcare practitioner consultations and consultations with a GP, for back pain. Specifically, women were more likely to consult with a GP for their back pain if they consulted with: medical specialists (OR=5.58; 95% CI: 1.90, 16.36) (p=0.002); and/or a physiotherapist (OR=2.49; 95% CI: 1.14, 5.44) (p=0.021).

4.15 Associations between consulting a medical specialist and other healthcare practitioners

Similarly, associations between consultation with a medical specialist for back pain and consultations with other healthcare practitioners are presented in *Table 7.* Statistically significant associations were identified between a number of healthcare practitioner consultations and consultations with a medical specialist, for back pain. Specifically, women were more likely to consult with a medical specialist for their back pain if they consulted with: a GP (OR=4.96; 95% CI: 1.70, 14.47) (p=0.003); and/or a physiotherapist (OR=2.57; 95% CI: 1.01, 6.50) (p=0.046);

4.16 Associations between consulting a physiotherapist and other healthcare practitioners

On the other hand, associations between consultation with a physiotherapist for back pain and consultations with other healthcare practitioners are presented in *Table 8*. Statistically significant associations were identified between a number of healthcare practitioner consultations and consultations with a physiotherapist, for back pain. Specifically, women were more likely to consult with a physiotherapist for their back pain if they consulted with: a medical specialist (OR=2.67; 95% CI: 1.04, 6.80) (p=0.039) and/or a GP (OR=2.57; 95% CI: 1.20, 5.44) (p=0.014).

Table 6: The association between consultation with a general practitioner and consultations with other healthcare practitioners

Characteristics		Consulted a General Practitioner Yes (n=738) %	No (n=518) %	p-value	Odds Ratio*	95% C.I. *	p-value*
Consulted medical specialists	yes	41	3	<0.001	5.58	1.90, 16.36	0.002
	no	59	97		1.00	—	
Consulted a physiotherapist	yes	55	25	<0.001	2.49	1.14, 5.44	0.021
	no	45	75		1.00	—	

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income.

Table 7: The association between consultation with a specialist and consultations with other healthcare practitioners

Characteristics		Consulted a Specialist Yes (n=213) %	No (n=757) %	p-value	Odds Ratio*	95% C.I. *	p-value*
Consulted a general practitioner	yes	93	37	<0.001	4.96	1.70,14.47	0.003
	no	07	63		1.00	—	
Consulted a physiotherapists	yes	63	30	<0.001	2.57	1.01,6.50	0.046
	no	37	70		1.00	—	

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income.

Table 8: The association between consultation with a physiotherapist and consultations with other healthcare practitioners

Characteristics		Consulted a Physiotherapist					
		Yes (n=488) **%**	**No** (n=666) **%**	**p-value**	**Odds Ratio***	**95% C.I.***	**p-value***
Consulted a general practitioner	yes	73	43	<0.001	2.57	120, 5.49	0.014
	no	27	57		1.00	—	
Consulted medical specialists	yes	35	12	<0.001	2.67	1.04, 6.80	0.039
	no	65	88		1.00	—	

* obtained from a logistic regression model, adjusted for area of residence, education, marital status, and income

5. Discussion

This thesis reported on the first national, representative study of women's back pain care in Australia, focusing on the self-reported medical and allied healthcare utilisation and formal and informal integration of healthcare services among the 59-64-year-old from the 1946 – 1951 cohort of the Australian Longitudinal Study on Women's Health. The analysis revealed interesting findings among Australian women suffering from back pain and their healthcare utilisation from the medical and allied practitioner and reasons for consulting a practitioner.

As context for the findings, as mentioned in Chapter 1, Medicare being Australia's universal healthcare scheme and GPs being the primary contact healthcare providers, facilitating access to other health and related services and coordinating care for those with complex and chronic care needs. This study also found that over half of women with back pain consulted a GP, one-sixth of women consulted a medical specialist, and over one-third of women consulted a physiotherapist suggesting that back pain sufferers seek help for both medical and allied healthcare providers. Similarly, a study from the UK (n=2,422), reported 67.2% of chronic pain sufferers consulted a GP with 34.0% consulting a medical specialist and 25.9% a physical therapist (Haetzman et al., 2003). The high prevalence may be contributed to the design of the healthcare system in Australia. Studies reported that referrals for medical imaging, medical interventions, and affordability were the strong predictors for individuals with back pain consulting a medical practitioner (Chenot et al., 2008; Hurwitz et al.,

2016; Macfarlane et al., 2012). A Canadian study on patients seeking help for back pain reported 83.4% of study participants consulted a medical doctor and the contributing factors for the high prevalence in seeking help from medical doctors was the intensity of back pain and absent to work (Blanchette, Rivard, Dionne, Hogg-Johnson, & Steenstra, 2016). Therefore, the high prevalence of GP consultations may be contributed due to the framework of the healthcare system, intensity of back pain experienced by the sufferers, work absenteeism and seeking a referral for claiming rebates and to reduce out of pocket medical expenditure by individuals suffering from back pain.

Furthermore, the duration and intensity of pain experienced by women appeared to influence consultations with healthcare providers. Women were more likely to consult a GP, medical specialist and a physiotherapist if they had regular/continuous back pain but GP or medical specialist were more likely to be consulted if they had high levels of back pain intensity. Similarly, studies from France and Canada reported the intensity of back pain and age of the individual were the key predictor to seek help from a medical practitioner (Blanchette et al., 2016; Depont et al., 2010b). Further, the majority of women with back pain consulted a GP for pain relief but consulted a physiotherapist for improved mobility and function along with pain relief. Women felt that they benefited more from consulting their GP and/or physiotherapist rather than a medical specialist. This may be due to effective pain management interventions provided by their GP or physiotherapist. A German study reported that medical specialists were consulted for imaging and surgical intervention purposes and not for pain management (Chenot et al., 2008).

This study findings suggest that GP consultations were the preferred choice for back pain care among women with comorbid conditions such as sleeping problems, anxiety/tension, fatigue, and depression. Other studies have also reported that the medical doctors were the preferred choice among individuals with back pain coexisting with other health conditions (Gore, Sadosky, Stacey, Tai, & Leslie, 2012; Hong, Reed, Novick, & Happich, 2013). The majority of women who visited a physiotherapist consulted for musculoskeletal symptoms related to back pain like leg pain or sciatica, stiffness, muscle spasm, pins and needles or numbness, and other back pain related symptoms. Therefore, comorbid conditions associated with back pain appear to determine the preferred healthcare choice by Australian women.

Furthermore, previous studies have shown a high rate of referral associations between GPs and physiotherapists and GPs have been found to be the primary source of referrals to physiotherapists (Cant & Foster, 2011; Hensher, 1997; Jørgensen & Olesen, 2001). Another study from New Zealand demonstrated that physiotherapists receive 47% of referrals from GPs for accident related back pain (Love et al., 2004). It has been also reported that the female patients were more likely to be referred compared to males (Jørgensen & Olesen, 2001). This study found that majority of women consulted their GP as their first practitioner (74.6%) and as a second practitioner consulted by 12.7% of the women. On the other hand, physiotherapist was the first practitioner consulted by 21.7% of the women and the second practitioner consulted by 35.7% of the women. Suggesting that there were more referrals from GPs to physiotherapists but fewer referrals from physiotherapists to GPs.

Women expressed that waiting time for getting a GP and medical specialists appointment was greater than getting an appointment with a physiotherapist. This may be due to the ready availability of registered physiotherapists compared to GPs and medical practitioners in the workforce (Australia, 2010; Australian Institute of Health and Welfare, 2014). However once GP was consulted, the majority of women were satisfied with the consultation time with their GP. Women with back pain also expressed satisfaction towards care received from their physiotherapist. Participants in a French study also reported that the waiting time for getting an appointment with a medical specialist was greater, and an early intervention from a physical therapist was correlated to reduced work absenteeism (Bouton et al., 2008). The debilitating nature of back pain may persuade back pain sufferers to explore healthcare options for managing symptoms associated with pain. Furthermore, patients personal and work circumstances and a need for reducing costs associated with medical care may be the reasons for consulting a GP for receiving referrals to visit a physiotherapist, these factors may be a focus of future research.

Integration between healthcare providers is crucial for delivering effective healthcare services (Suter, Oelke, Adair, & Armitage, 2009). The framework of Australian Medicare scheme recognises and supports formal integration between GPs, medical specialists and allied healthcare services (G. P. Davies, Perkins, McDonald, & Williams, 2009). Further, informal integration between public and private healthcare providers were medical and allied healthcare practitioners referring patients to private medical practitioners and CAM

practitioners like chiropractors and massage therapists and other CAM practices.

Integration of healthcare services with formal and informal integration between GPs, medical specialists and physiotherapists are effectively established in Australian healthcare system, the referral patterns are based on the GPs assessment of the patient condition (G. P. Davies et al., 2009). However, the intensity of back pain and comorbid conditions appear to determine the consultation patterns among patients with back pain. GP consultations were prevalent among women with back pain associated psychosomatic comorbid conditions and women with musculoskeletal symptoms consulted a physiotherapist. As the scope of this study was unable to determine the causes of back pain and whether psychosomatic factors or the musculoskeletal symptoms were the causes for back pain. It is maybe worth considering a formal cross-referral system, wherein medical specialists and physiotherapists refer patients with comorbid conditions to a GP if they were the first practitioners to be visited.

This study found significant referral associations between medical healthcare providers and allied healthcare providers. Further, women who consulted a medical specialist were more likely to visit a GP, suggesting medical specialists may be refereeing women with back pain to a GP. The referral associations between physiotherapists and GPs is less significant compared to medical specialists. Similarly, as reported in other studies this study also found women who consulted a GP were more likely to consult a medical specialist but women who consulted a physiotherapist were less likely to consult a medical specialist,

suggesting a need for physiotherapists to refer women with back pain to a GP for a referral to a medical specialist. Therefore, there is a stronger formal integration between medical healthcare providers and physiotherapist but the referrals from physiotherapist to medical healthcare providers are less significant, these associations may be a focus of future research.

The study has outlined the findings from the ALSWH about the healthcare utilisation among Australian women suffering from back pain, 1) the findings may inform healthcare practitioners, policy makers and back pain sufferers about the currents trends in healthcare utilisation among women with back pain. 2) the findings will inform healthcare policy makers to devise effective policies around formal cross referral patterns between medical and allied healthcare providers particularly for patients with comorbid conditions to improve the quality of life for women with back pain, reduce the burden on healthcare services, and reduce productivity loss.

5.1 Limitations

The interpretation of our study findings is limited as visits to GPs, medical specialists and/or physiotherapists for back pain were self-reported and therefore the results may be potentially affected by recall bias. Despite this, ALSWH is a respected source of data for epidemiological research in Australia, and these limitations are countered by the insights provided the opportunity to analyse a large, nationally representative sample of older women with back pain. Further, this study investigated back pain behaviour of 59-64 years old Australian women and therefore generalisability/external validity of the findings to others who suffer back pain is limited.

6. Implications

6.1 Implications from the research

The research findings presented in this study have a number of implications for a range of stakeholder including medical and allied healthcare providers, women with back pain, and health policy makers regarding medical and allied healthcare utilisation among back pain sufferers. This section now focuses on exploring the implications of the research findings presented for each of these stakeholder groups.

6.1.1 Implications for women with back pain and related symptoms

Women who are experiencing back pain and related symptoms with serious consequences for their health and quality of life are directly visiting a medical specialist or a physiotherapist without consulting their GP. Indeed, the findings presented in this thesis tend to reinforce the need for back pain sufferers with associated comorbid conditions such as psychosomatic and musculoskeletal symptoms, to consider the relative safety and risks of directly consulting an allied healthcare practitioner without consulting a GP. This finding has significant health services and public health implications around possible direct and indirect risks to women with back pain associated with comorbid conditions. One primary finding arising from this study pertains to the women with intense back pain shows a high prevalence of use of medical healthcare directly visiting a physiotherapist, this refers to the risk of physiotherapists just focusing on intense pain and not on any psychosomatic conditions associated with back pain. Indirect risks include risk associated with delayed or incorrect diagnosis

and/or treatment of psychosomatic conditions, which can be a risk especially if the physiotherapist does not refer individuals with back pain associated with comorbid conditions to a GP. There is a need for women to help promote open communication with all healthcare providers contributing to the management of their back pain related symptoms. Furthermore, it is important that women with back pain communicate effectively with their GPs or medical specialists regarding their current and ongoing physiotherapy.

6.1.2 Implications for back pain care providers

The body of work presented in this thesis has clearly demonstrated the high use of medical and allied healthcare practitioners amongst women with back pain and a range of back pain related symptoms that predict use of specific medical and allied healthcare providers and stratified by back pain status and/or visiting them. Such findings can assist both medical practitioners (GPs and medical specialists) and physiotherapists. For example, the study found a positive association between women experiencing intense back pain and consulting a GP and/or a medical specialist. Women with back pain along with musculoskeletal issues preferred visiting physiotherapist. Women with back pain along with comorbid psychosomatic conditions were positively associated with consultations with GP. Women who were having regular and continuous back pain were more likely to consult a GP or a specialist.

The high prevalence of consultations with GPs or medical specialists among women with back pain as found in this study might elicit the importance of medical healthcare providers referring women to allied healthcare services. From this study it is clear that GPs are referring women to medical specialists

and physiotherapists but there is a need for medical specialists and physiotherapists cross-referring women to GPs if they have comorbid condition/s along with back pain especially if medical specialists and physiotherapists happened to be their first practitioner to be visited. The cross-referral processes would ensure optimal back pain care and care for comorbid condition/s. The cross-referral processes could strengthen the existing formal integration between medical and allied healthcare services to ensure a collaborative approach by all healthcare services for addressing back pain as well as, the comorbid condition/s.

Further, the cross-referral processes could be improved by attending medical and allied healthcare workshops or training sessions and by better cooperating between medical and allied health providers, particularly when attending to individuals with back pain and associated comorbid condition/s. The cross-referral processes may lead an improved discussion between medical and allied healthcare regarding care provided for individuals with back pain. This may help healthcare providers to learn and understand healthcare information to help reduce the risk for individuals with intense pain associated with comorbid condition/s. Both medical and allied healthcare providers should take the responsibility of improving patient-practitioner communication in back care; the efficient and satisfactory communication may help healthcare providers prevent potential health risks among their patients and provide safe treatment option for back pain care and associated comorbid condition/s.

6.1.3 Implications for policy makers

This study has investigated the use of medical and allied healthcare utilisation among Australian women aged 59-64 years with back pain. This research demonstrates the high use of medical and allied healthcare for back pain care. A majority of women expressed accessing a physiotherapist was easier compared to accessing a medical healthcare provider. Majority of women were satisfied with the care provided by their GP and their physiotherapist. However, women expressed that the waiting time for receiving medical care was longer. The findings from this research have implications for and should be considered within, future health policy development around medical and allied healthcare services, particularly in reducing the waiting time for receiving medical care among people suffering from back pain.

In the context of the significant associations between the consultations with a medical and allied healthcare provider for continuous/regular and intense back pain associated with comorbid conditions, policy makers should consider the need for statutory regulation of the effective cross-referral procedures between GPs, medical specialists, and physiotherapists. Medical specialists and physiotherapists referring individuals with intense back pain associated with comorbid conditions to a GP. In addition to the necessity of statutory regulation to improve better communication between medical and allied healthcare providers. It is also recommended that health policy makers may design strategies for educating individuals with back pain to promptly report any comorbid conditions to their healthcare providers. For example, developing flyers which illustrate possible comorbid conditions associated with back pain or

designing a symptom checklist that could be provided to the individuals with back pain for diagnosing any associated comorbid condition/s. Further, there appears to be a need for guidelines to encourage and facilitate providers to seek information from individuals with back pain associated with comorbid conditions to make informed decisions about health services referrals.

6.1.4 Implications for future research

This thesis highlights the need for future research examining the reasons for back pain sufferers choose to visit a specific healthcare provider as their first choice, to explore the associations between the characteristics of elderly women and their consultation patterns. The study found that comorbid conditions appear to determine the consultation patterns among women with back pain, future research may focus on the associations between comorbid conditions and consultations with medical and allied healthcare providers, to investigate relationships between comorbid conditions and consultations patterns. Another area for future research is the referral associations between physiotherapist and medical healthcare providers. The study found formal integration between medical and allied healthcare services, however, the cross-referral associations between physiotherapists and medical healthcare practitioners are less significant. Therefore, future research may investigate the cross-referral associations between physiotherapists and medical healthcare providers particularly among individual with back pain who are diagnosed with comorbid condition/s.

7. Conclusion

This study revealed that Australian women are consulting with different and multiple medical care providers for the back pain; with back pain severity and intensity appearing to help determine which practitioner is consulted. Women were more likely to consult with a GP, medical specialist or physiotherapist if they had regular or continuous back pain. In addition, women were more likely to consult with a GP or medical specialist if they had high levels of back pain intensity. Women were more likely to consult a GP if they had psychosomatic comorbid conditions associated with back pain. Women were more likely to consult a physiotherapist if they had musculoskeletal symptoms related to back pain. In addition, the type of back pain related symptom among women has also influenced the choice of care provider (e.g. women were more likely to visit a GP and a physiotherapist for pain relief). It does, however, appear that Australian women with back pain are satisfied with the care they received from their GP, medical specialist and/or physiotherapist. Formal integration between GPs and medical specialists and GPs and physiotherapists is well established in Australia. However, given the high prevalence of consultations with GPs, medical specialists, and physiotherapists for back pain care, there is a need for a more formal cross-referral system, wherein medical specialists and physiotherapists refer patients with comorbid conditions to a GP if they were the first practitioners to be visited. It is important that future research to further investigate the consultation and referral patterns of Australian women with back pain for safer and better planning of healthcare responses for back pain care.

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9. Appendices

Appendix 1: Survey 6: Australian Longitudinal Study on Women's Health. Sixth Survey for the 1946 – 51 cohort

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 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, 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 ☐ → Go to Q63
- 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)*	☐	☐	☐

■

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

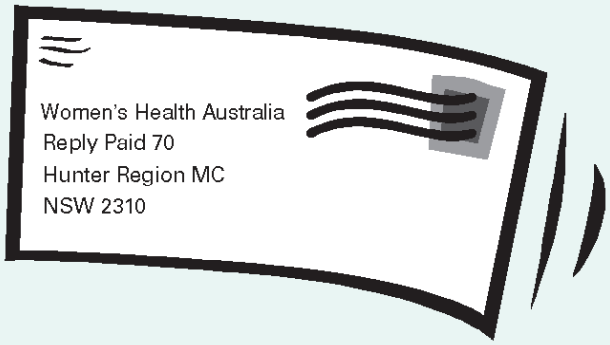
Town / Suburb State Postcode

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!



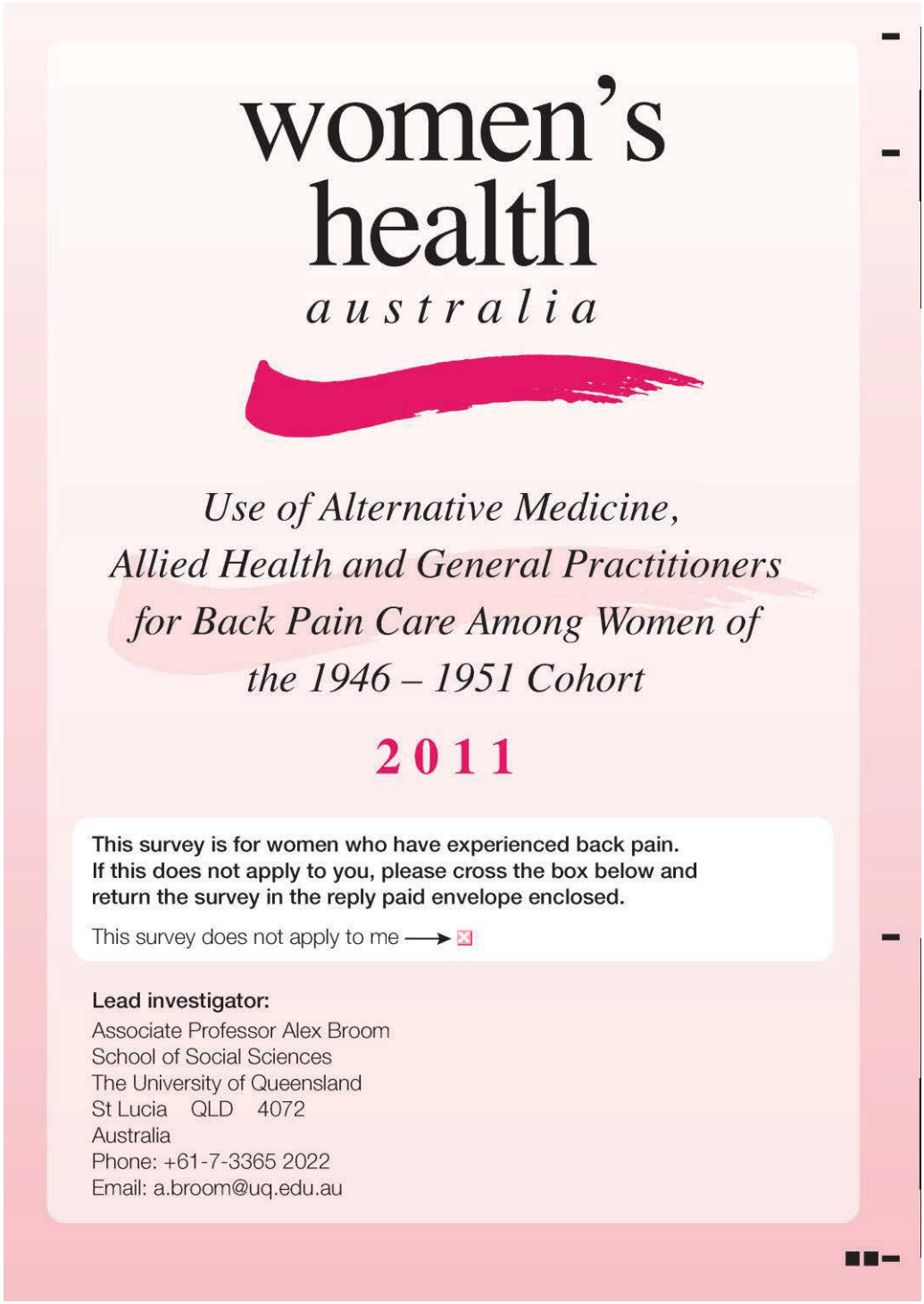
women's health australia

Sixth survey for the women of the 1946-51 cohort 2010

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 2: Sub-study Survey: Use of Alternative Medicine, Allied Health and General Practitioners for Back Pain Care Among Women of the 1946 – 1951 Cohort



women's health
australia

Use of Alternative Medicine, Allied Health and General Practitioners for Back Pain Care Among Women of the 1946 – 1951 Cohort

2011

This survey is for women who have experienced back pain.
If this does not apply to you, please cross the box below and return the survey in the reply paid envelope enclosed.

This survey does not apply to me ⟶ ☒

Lead investigator:
Associate Professor Alex Broom
School of Social Sciences
The University of Queensland
St Lucia QLD 4072
Australia
Phone: +61-7-3365 2022
Email: a.broom@uq.edu.au

How to complete this survey

This is a survey about use of alternative medicine, allied health, and general practice. Some of the questions are the same as those in the main surveys you have completed in earlier years.

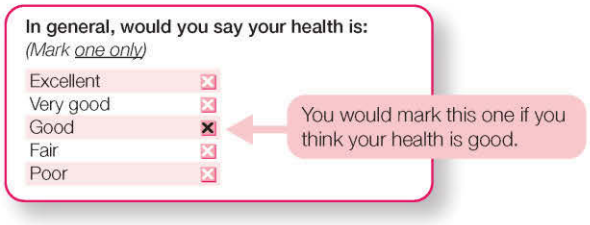
Please answer every question you can. If you are unsure about how to answer a question, mark the response for the closest answer to how you feel.

Please answer each question for the time period indicated in the question.

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.

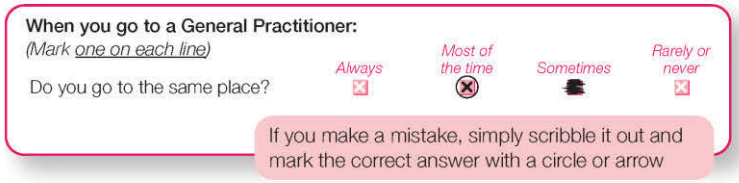
INSTRUCTIONS ▪ Use a black or blue biro ▪ Do not fold or bend this survey

▪ **Cross the boxes like this:**



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

▪ **Correct mistakes like this:**



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 to talk to someone, you could ring Lifeline on 131 114 (local call).

Q1 How long have you had back pain? *(Please specify number of years / months)*

☐☐ years ☐☐ months

Q2 Please describe how often you experience back pain. *(Mark one only)*

- ☒ Never
- ☒ Rarely
- ☒ Intermittently
- ☒ Regularly
- ☒ Continuously

Q3 Please rate the intensity of your typical back pain in the past 12 months. *(Mark one only)*

Q4 Please rate the intensity of your worst back pain in the past 12 months. *(Mark one only)*

Q5 Please rate the intensity of your back pain at its best in the past 12 months. *(Mark one only)*

Q6 Please identify the number at which your back pain is at an acceptable level. *(Mark one only)*

Q7 How many times have you consulted the following alternative health practitioners for back pain during the past 12 months? *(Mark one on each line)*

	None	1 or 2	3 or 4	5 or 6	7 or more
a Acupuncturist	☒	☒	☒	☒	☒
b Aromatherapist	☒	☒	☒	☒	☒
c Craniosacral Therapist	☒	☒	☒	☒	☒
d Chiropractor	☒	☒	☒	☒	☒
e Herbalist / Naturopath	☒	☒	☒	☒	☒
f Massage Therapist	☒	☒	☒	☒	☒
g Meditation / Yoga	☒	☒	☒	☒	☒
h Osteopath	☒	☒	☒	☒	☒
i Reflexologist	☒	☒	☒	☒	☒
j Reiki Therapist	☒	☒	☒	☒	☒
k Traditional Chinese Medicine Practitioner	☒	☒	☒	☒	☒
l Other *(please specify)*	☒	☒	☒	☒	☒

Q8 If you did consult with any of the alternative health practitioners listed in Q7 for your back pain, how much did it cost you in total for these consultations during the past 12 months? *(Mark one only)*

- ☒ Less than $100
- ☒ $100 – $499
- ☒ $500 – $999
- ☒ $1,000 – $1,499
- ☒ $1,500 or above

Q9 How many times have you consulted the following allied health practitioners for back pain during the past 12 months? *(Mark one on each line)*

	None	1 or 2	3 or 4	5 or 6	7 or more
a Physiotherapist	☒	☒	☒	☒	☒
b Occupational Therapist	☒	☒	☒	☒	☒
c Nurse	☒	☒	☒	☒	☒
d Pharmacist	☒	☒	☒	☒	☒
e Other *(please specify)*	☒	☒	☒	☒	☒

Q10 If you did consult with any of the allied health practitioners listed in Q9 for your back pain, how much did it cost you in total for these consultations during the past 12 months? *(Mark one only)*

- ☒ Less than $100
- ☒ $100 – $499
- ☒ $500 – $999
- ☒ $1,000 – $1,499
- ☒ $1,500 or above

Q11 How many times have you consulted the following medical practitioners for back pain during the past 12 months? *(Mark one on each line)*

	None	1 or 2	3 or 4	5 or 6	7 or more
a General Practitioner	☒	☒	☒	☒	☒
b Orthopaedic Specialist	☒	☒	☒	☒	☒
c Neurologist	☒	☒	☒	☒	☒
d Rheumatologist	☒	☒	☒	☒	☒
e Other *(please specify)*	☒	☒	☒	☒	☒

Q12 If you did consult with any of the medical practitioners listed in Q11 for your back pain, how much did it cost you in total for these consultations during the past 12 months? *(Mark one only)*

- ☒ Less than $100
- ☒ $100 – $499
- ☒ $500 – $999
- ☒ $1,000 – $1,499
- ☒ $1,500 or above

Q13 How many times have you taken the following self-prescribed treatments for back pain during the past 12 months? *(Mark one on each line)*

	None	1 or 2	3 or 4	5 or 6	7 or more
a Herbal medicines	☒	☒	☒	☒	☒
b Painkillers (eg Panadol, Nurofen)	☒	☒	☒	☒	☒
c Vitamins / Minerals (eg magnesium)	☒	☒	☒	☒	☒
d Supplements (eg glucosamine, fish oils)	☒	☒	☒	☒	☒
e Meditation or Yoga	☒	☒	☒	☒	☒
f Aromatherapy oils	☒	☒	☒	☒	☒
g Chinese medicine	☒	☒	☒	☒	☒
h Self prayer	☒	☒	☒	☒	☒
i Other alternative therapies *(please specify)* -	☒	☒	☒	☒	☒

Q14 If you did take any of the self-prescribed treatments listed in Q13 for your back pain, how much did it cost you in total for these treatments during the past 12 months? *(Mark one only)*

- ☒ Less than $100
- ☒ $100 – $499
- ☒ $500 – $999
- ☒ $1,000 – $1,499
- ☒ $1,500 or above

Q15 In which order did you consult practitioners for your back pain? *(Mark all that apply)*

	1st	2nd	3rd	4th	5th	6th	7th	8th
a GP	☒	☒	☒	☒	☒	☒	☒	☒
b Specialist	☒	☒	☒	☒	☒	☒	☒	☒
c Pharmacist	☒	☒	☒	☒	☒	☒	☒	☒
d Chiropractor	☒	☒	☒	☒	☒	☒	☒	☒
e Acupuncturist	☒	☒	☒	☒	☒	☒	☒	☒
f Herbalist / Naturopath	☒	☒	☒	☒	☒	☒	☒	☒
g Physiotherapist	☒	☒	☒	☒	☒	☒	☒	☒
h Massage Therapist	☒	☒	☒	☒	☒	☒	☒	☒
i Osteopath	☒	☒	☒	☒	☒	☒	☒	☒
j Self-prescribed alternative medicine	☒	☒	☒	☒	☒	☒	☒	☒
k Other *(please specify)* -	☒	☒	☒	☒	☒	☒	☒	☒
l Did not seek help	☒							

Q16 For how long did you have back pain before seeking help from a conventional health care practitioner (eg GP, physiotherapist, occupational therapist)? *(Mark one only)*

- ☒ Sought help immediately
- ☒ Less than a month
- ☒ 1-5 months
- ☒ 6-12 months
- ☒ More than 12 months
- ☒ Did not seek help

Q17 For how long did you have back pain before seeking help from an alternative medicine practitioner? *(Mark one only)*

- ☒ Sought help immediately
- ☒ Less than a month
- ☒ 1 – 5 months
- ☒ 6 – 12 months
- ☒ More than 12 months
- ☒ Did not seek help

Q18 For how long did you have back pain before using self-prescribed alternative medicine? *(Mark one only)*

- ☒ Sought help immediately
- ☒ Less than a month
- ☒ 1 – 5 months
- ☒ 6 – 12 months
- ☒ More than 12 months
- ☒ Did not self-prescribe

Q19 Which of the following reasons were important in your decision to consult the practitioner(s)? *(Mark all that apply)*

	GP / Specialist	Chiro-practor	Acupunct-urist	Herbalist / Naturopath	Physio-therapist	Massage Therapist	Osteopath
a Pain relief	☒	☒	☒	☒	☒	☒	☒
b To improve mobility	☒	☒	☒	☒	☒	☒	☒
c To improve function	☒	☒	☒	☒	☒	☒	☒
d Relaxation / stress relief	☒	☒	☒	☒	☒	☒	☒
e General wellbeing	☒	☒	☒	☒	☒	☒	☒
f Other *(please specify)* ----------	☒	☒	☒	☒	☒	☒	☒

Q20 Which of the following information sources have been influential in your decision to use alternative medicine for your back pain? *(Mark one on each line)*

	No influence at all	Of little influence	Moderately influential	Influential	Very influential
a Family or relatives	☒	☒	☒	☒	☒
b Partner	☒	☒	☒	☒	☒
c Friends or colleagues	☒	☒	☒	☒	☒
d Internet	☒	☒	☒	☒	☒
e Book or magazine	☒	☒	☒	☒	☒
f Mass media (eg newspaper, TV, radio)	☒	☒	☒	☒	☒
g Doctor	☒	☒	☒	☒	☒
h Pharmacist	☒	☒	☒	☒	☒
i Allied health worker (eg nurse)	☒	☒	☒	☒	☒
j Alternative health practitioner	☒	☒	☒	☒	☒

If you DID NOT USE alternative medicine for your back pain, please go to Question 26.

Q21 If you did use alternative medicine, did you consult your doctor before using these medicines for your back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never

Q22 If you did use alternative medicine, did you consult your pharmacist before using these medicines for your back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never

Q23 If you did use alternative medicine, did you consult your physiotherapist before using these medicines for your back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never

Q24 If you did use alternative medicine, did you inform your doctor after using these medicines for back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never

Q25 If you did use alternative medicine, did you inform your pharmacist after using these medicines for back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never

Q26 If you did use physiotherapy, did you consult your doctor before using physiotherapy for your back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never
- Did not use

Q27 If you did use physiotherapy, did you receive a referral from a doctor before using it for your back pain? *(Mark one only)*

- Always
- Sometimes
- Rarely
- Never
- Did not use

Q28 Which of the following information sources have been influential in your decision to use physiotherapy for your back pain? *(Mark one on each line)*

	No influence at all	Of little influence	Moderately influential	Influential	Very influential
a Family or relatives	☒	☒	☒	☒	☒
b Partner	☒	☒	☒	☒	☒
c Friends or colleagues	☒	☒	☒	☒	☒
d Internet	☒	☒	☒	☒	☒
e Book or magazine	☒	☒	☒	☒	☒
f Mass media (eg newspaper, TV, radio)	☒	☒	☒	☒	☒
g Doctor	☒	☒	☒	☒	☒
h Pharmacist	☒	☒	☒	☒	☒
i Allied health worker (eg nurse)	☒	☒	☒	☒	☒
j Alternative health practitioner	☒	☒	☒	☒	☒

If you DID NOT USE alternative medicine for your back pain, please go to Question 35

Q29 If you did use alternative medicine and consulted a GP, did you feel able to talk to your GP about your alternative medicine practitioner use? *(Mark one only)*

- Always ☒
- Sometimes ☒
- Rarely ☒
- Never ☒
- Did not consult a GP ☒

Q30 If you did use alternative medicine and consulted a GP, did you feel able to talk to your alternative medicine practitioner about your GP consultation(s)? *(Mark one only)*

- Always ☒
- Sometimes ☒
- Rarely ☒
- Never ☒
- Did not consult a GP ☒

Q31 If you did use alternative medicine and physiotherapy, did you feel able to talk to your physiotherapist about your alternative medicine practitioner use? *(Mark one only)*

- Always ☒
- Sometimes ☒
- Rarely ☒
- Never ☒
- Did not use physiotherapy ☒

Q32 If you used more than one alternative medicine practitioner, did you feel able to talk to your alternative medicine practitioner(s) about your other alternative medicine practitioner use? *(Mark one only)*

- Always ☒
- Sometimes ☒
- Rarely ☒
- Never ☒
- Did not use more than one alternative medicine practitioner ☒

Q33 **If you self-prescribed alternative medicine and consulted a GP, did you feel able to talk to your GP about your self-prescribed alternative medicine use?** ***(Mark one only)***

- ☒ Always
- ☒ Sometimes
- ☒ Rarely
- ☒ Never
- ☒ Did not self-prescribe
- ☒ Did not consult a GP

Q34 **If you self-prescribed alternative medicine and used alternative medicine practitioner(s), did you feel able to talk to your alternative medicine practitioner(s) about your self-prescribed alternative medicine use?** ***(Mark one only)***

- ☒ Always
- ☒ Sometimes
- ☒ Rarely
- ☒ Never
- ☒ Did not self-prescribe

Q35 **Do you agree with the following statements?** ***(Mark one on each line)***

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
a	Alternative medicine is more natural than conventional medicine	☒	☒	☒	☒	☒
b	Alternative medicine is effective in the treatment of back pain	☒	☒	☒	☒	☒
c	Alternative medicine has fewer side effects than conventional medicine	☒	☒	☒	☒	☒
d	Alternative medicine is a better approach to pain management than conventional medicine	☒	☒	☒	☒	☒
e	Alternative medicine promotes a holistic approach to health	☒	☒	☒	☒	☒
f	Alternative medicine gives me more control over my health / body	☒	☒	☒	☒	☒
g	Alternative medicine practitioners spend a longer time with me in consultations when compared with my doctor	☒	☒	☒	☒	☒
h	Alternative practitioners provide more support to me than my doctor does	☒	☒	☒	☒	☒
i	I find it easier to talk to an alternative health practitioner than to a doctor	☒	☒	☒	☒	☒
j	I have a more equal relationship with alternative health practitioners than with doctors	☒	☒	☒	☒	☒
k	I have difficulties accessing conventional medicine for the treatment of my back pain	☒	☒	☒	☒	☒
l	Knowledge about evidence of alternative medicine is important to me as a patient	☒	☒	☒	☒	☒
m	Doctors should be able to advise their patients about commonly used alternative medicines for back pain	☒	☒	☒	☒	☒
n	Clinical evidence is important in my choice of alternative medicine	☒	☒	☒	☒	☒
o	My personal experience of the effectiveness of alternative medicine is more important than clinical evidence	☒	☒	☒	☒	☒
p	Alternative medicine needs to be tested for safety / side effects	☒	☒	☒	☒	☒

Q36 **Thinking about the care you have received for back pain, 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 hospital if you need it	☒	☒	☒	☒	☒	☒
c	Access to after-hours medical care	☒	☒	☒	☒	☒	☒
d	Access to a GP who bulk bills	☒	☒	☒	☒	☒	☒
e	Access to a female GP	☒	☒	☒	☒	☒	☒
f	Hours when a GP is available	☒	☒	☒	☒	☒	☒
g	Number of GPs you have to choose from	☒	☒	☒	☒	☒	☒
h	Ease of seeing the GP of your choice	☒	☒	☒	☒	☒	☒
i	Length of wait to get a GP appointment	☒	☒	☒	☒	☒	☒
j	Quality of care provided by your GP	☒	☒	☒	☒	☒	☒
k	Amount of time for a GP consultation	☒	☒	☒	☒	☒	☒
l	Amount of information sharing by GP	☒	☒	☒	☒	☒	☒
m	The outcomes of your medical care (how much you are helped by your GP)	☒	☒	☒	☒	☒	☒
n	The personal manner (courtesy, respect, sensitivity, friendliness) of your GP	☒	☒	☒	☒	☒	☒
o	The technical skills (thoroughness, carefulness, competence) of your GP	☒	☒	☒	☒	☒	☒
p	Availability of alternative health practitioners in your community	☒	☒	☒	☒	☒	☒
q	Ease of seeing the alternative health practitioner of your choice	☒	☒	☒	☒	☒	☒
r	Access to information about alternative medicine	☒	☒	☒	☒	☒	☒
s	Access to physiotherapists if you need them	☒	☒	☒	☒	☒	☒
t	Length of wait to get a physiotherapy appointment	☒	☒	☒	☒	☒	☒
u	Quality of care provided by your physiotherapist	☒	☒	☒	☒	☒	☒
v	Access to pain medications if you need them	☒	☒	☒	☒	☒	☒
w	Access to a female physiotherapist	☒	☒	☒	☒	☒	☒

Q37 **How beneficial did you find the following practitioners or practices for your back pain?**
(Mark one on each line)

		No benefit at all	Of little benefit	Moderately beneficial	Beneficial	Very beneficial	Did not consult
a	GP	☒	☒	☒	☒	☒	☒
b	Specialist	☒	☒	☒	☒	☒	☒
c	Chiropractor	☒	☒	☒	☒	☒	☒
d	Acupuncturist	☒	☒	☒	☒	☒	☒
e	Herbalist / Naturopath	☒	☒	☒	☒	☒	☒
f	Physiotherapist	☒	☒	☒	☒	☒	☒
g	Massage Therapist	☒	☒	☒	☒	☒	☒
h	Osteopath	☒	☒	☒	☒	☒	☒
i	Self-prescribed alternative medicine	☒	☒	☒	☒	☒	☒

Q38 If you have private health insurance, does your policy give you a rebate for any of the following? *(Mark one on each line)*

	Yes	No	Don't know
a GP	☒	☒	☒
b Specialist	☒	☒	☒
c Chiropractor	☒	☒	☒
d Acupuncturist	☒	☒	☒
e Herbalist / Naturopath	☒	☒	☒
f Physiotherapist	☒	☒	☒
g Massage Therapist	☒	☒	☒
h Osteopath	☒	☒	☒
i Self-prescribed alternative medicine	☒	☒	☒
j Do not have private health insurance	☒	☒	☒

Q39 During your last period of back pain, did you seek help for any of the following symptoms or conditions relating to back pain? (*Mark all that apply*, indicating who you sought help from where applicable)

	GP or Specialist	Chiro-practor	Acupunct-urist	Herbalist / Naturopath	Physio-therapist	Massage Therapist	Osteopath	Did not seek help
a Headaches / Migraines	☒	☒	☒	☒	☒	☒	☒	☒
b Nausea	☒	☒	☒	☒	☒	☒	☒	☒
c Back pain	☒	☒	☒	☒	☒	☒	☒	☒
d Neck pain	☒	☒	☒	☒	☒	☒	☒	☒
e Leg pain / sciatica	☒	☒	☒	☒	☒	☒	☒	☒
f Arm pain	☒	☒	☒	☒	☒	☒	☒	☒
g Pins and needles / numbness	☒	☒	☒	☒	☒	☒	☒	☒
h Stiffness	☒	☒	☒	☒	☒	☒	☒	☒
i Fatigue	☒	☒	☒	☒	☒	☒	☒	☒
j Weakness	☒	☒	☒	☒	☒	☒	☒	☒
k Depression	☒	☒	☒	☒	☒	☒	☒	☒
l Sleeping problems	☒	☒	☒	☒	☒	☒	☒	☒
m Instability	☒	☒	☒	☒	☒	☒	☒	☒
n Muscle spasm	☒	☒	☒	☒	☒	☒	☒	☒
o Anxiety / tension	☒	☒	☒	☒	☒	☒	☒	☒

The next three questions ask only about now – how your health is now and about how your health limits certain activities now.

Q40 **In general, would you say your health is:** *(Mark one only)*

- ☒ Excellent
- ☒ Very good
- ☒ Good
- ☒ Fair
- ☒ Poor

Q41 **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

Q42 **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	☒	☒	☒

Q43 **During the past 4 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)	☒	☒

Q44 **During the past 4 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	☒	☒

Q45 During the past 4 weeks, to what extent has 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 ☒

Q46 How much bodily pain have you had during the past 4 weeks? *(Mark one only)*

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

Q47 During the past 4 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 ☒

Q48 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?	☒	☒	☒	☒	☒	☒

Q49 During the past 4 weeks, how much of the time has 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 ☒

Q50 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	☒	☒	☒	☒	☒

At Stage 2 of the project we are interested in interviewing a small number of women in more detail about their experiences with alternative medicine, allied health, and general practice regarding their back pain. Please indicate below whether you are willing to consider participating in a stage 2 face-to-face interview. Your participation is voluntary and will not affect your ongoing participation in the Women's Health Australia project.
(Please mark one box)

☒ Yes I am willing to receive further information about participating in a stage 2 face-to-face interview about my experiences of complementary and alternative medicine, allied health, and general practitioners regarding my back pain.

☒ No I would prefer not to participate in a stage 2 interview

Have we missed anything?
If you have anything else about your use of alternative medicine, allied health, or general practitioners for back pain that you would like to tell us, please write on the lines below. You may also like to take a moment to check you have not missed any questions or pages.

Thank you for taking the time to complete this survey.

If you need help to answer any of the questions, you can contact us by telephoning 1800 068 081 (freecall)

When you have completed the survey, please sign the next page and send the survey back to us as soon as possible.

We will detach the consent form and store it in a separate locked room.

women's health australia

CONSENT FORM

Project: Use of Alternative Medicine, Allied Health, and General Practitioners for Back Pain Care Among Women of the 1946 – 1951 Cohort

Researchers: Associate Professor Alex Broom, Professor Jon Adams, Associate Professor David Sibbritt, Professor Kathryn Refshauge and Dr Emma Kirby

I agree to participate in the survey, "Use of Alternative Medicine, Allied Health, and General Practitioners for Back Pain Care Among Women of the 1946-1951 Cohort".

I understand that this research is part of the Women's Health Australia project, and I have read and understood the Information for Participants statement that was sent to me. By completing this form:

- I understand that completing this survey is voluntary. If I do not complete this survey, I understand that this will not affect my continuing participation in the Women's Health Australia project.
- I understand that my personal information will remain confidential to the researchers.
- I agree that information gathered from the project may be published, provided that I will not be identified.
- I understand this project is part of Women's Health Australia and that my responses may be linked to information I have already provided to Women's Health Australia.

NAME:

SIGNATURE: DATE: / /

What is your date of birth? ***(Please write date in boxes)***

D D / M M / Y Y Y Y

Help us keep in touch!

Please provide a best contact number in case we want to talk to you about the survey:

It would also be helpful if we could have contact details of a relative or friend (once that relative or friend has agreed that you may provide these details) who would be able to help us find you should we lose contact.

NAME:

ADDRESS:

POST CODE:

PHONE (HOME): ( ) RELATIONSHIP TO YOU:

Appendix 3: The characteristics of women who consult health care practitioners for back pain: a nationally representative sample of 1,310 Australian women aged 59-64 years.

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Abstract

Background: Back pain affects a substantial proportion of the adult population and back pain sufferers tend to explore a wide range of health care options. This study investigates the use of a range of health care options utilised amongst Australian women with back pain.

Method: This is a sub-study of the Australian Longitudinal Study on Women's Health (ALSWH), designed to investigate multiple factors affecting the health and well-being of women over a 20-year period. The study focuses on 1,851 women aged 59-64 years, who had indicated that they had previously sought help from a health care practitioner for back pain.

Results: Half of the women (56.5% n=738) with back pain had consulted a general practitioner (GP), 16.2% (n=213) had consulted a medical specialist and 37.3% (n=488) had consulted a physiotherapist for their back pain. Women with regular or continuous back pain were more likely to consult a GP (OR=3.98), medical specialist (OR=5.66) and a physiotherapist (OR=1.63). Women who consulted a general practitioner and/or a medical specialist had a statistically significantly higher mean typical back pain intensity compared to women who did not consult a general practitioner ($p=0.001$) or medical specialist ($p<0.001$).

Conclusion: Australian women with back pain were more likely to consult a GP, medical specialist or physiotherapist if they had more regular/continuous back pain. However, women were more likely to consult a GP for back pain associated with psychosomatic comorbid conditions and consulted a physiotherapist for musculoskeletal issues. It is important that future research to further investigate the consultation and referral patterns identified in this study to inform health care

industry and the policy makers about the health care utilisation among Australian women with back pain.

Key words: Medical health care, allied health care, physiotherapist, back pain

Introduction

Back pain is a common and debilitating musculoskeletal disorder with an average lifetime prevalence of 70% (P. M. Brooks, 2006; Murthy et al., 2014a; B. F. Walker et al., 2004b; Webb et al., 2003). Back pain is the most prevalent of musculoskeletal conditions amongst adult populations (P. M. Brooks, 2006; Woolf & Pfleger, 2003) and is the second most common complaint seen in general practice (Broom et al., 2012; Haetzman et al., 2003). Unresolved back pain results in reduced physical function and psychological distress (Furlan et al., 2005), hence, back pain sufferers tend to explore a wide range of health care options including consultation with medical and allied health services (Burke, Upchurch, Dye, & Chyu, 2006; Wade et al., 2008).

A French study reported that 89% of the study sample of back pain suffers had visited general practitioners (GPs) 6 months prior to the study, 27.3% consulted a specialist and 55.9% had a visit from a physiotherapist (Depont et al., 2010a). Furthermore, studies have shown GPs are the prime source of referrals to allied health practitioners such as physiotherapists (Hensher, 1997; Jørgensen & Olesen, 2001).

Despite ongoing research on this topic, the extent of utilisation of all health care options by Australian women suffering from back pain is unknown, as to are the reasons for consulting different health care practitioners for back pain. In response to this gap in knowledge, this study investigates women's consultation with GPs, medical specialists, and physiotherapist for back pain.

Methods

Sample

This research is based on a sub-study of the Australian Longitudinal Survey on Women's Health (ALSWH). The ALSWH investigates multiple factors affecting the health and well-being of women over a 20-year period. In 1996, women in three age groups (18-23, 45-50, 70-75 years) were randomly selected from the national Medicare database and invited to participate. The respondents have been shown to be broadly representative of the national population of women in the target age groups (Brown et al, 1999). The focus of this study is women from the mid-age cohort (i.e. born in 1946-51), of which there were 10,011 women in the ALSWH survey conducted in 2010 (Survey 6). A sub-study survey of this cohort occurred in 2011 when the women were aged 59-64 years. For this substudy, 1,851 women who had indicated in Survey 6 that they had experienced back pain were mailed a questionnaire and of these women 1,310 (80.8%) returned completed sub-study questionnaires. Relevant ethical approval was gained from the Human Ethics Committee at the University of Queensland and University of Newcastle, Australia.

Demographic characteristics

Postcode of residence was used to classify the area of residence as urban or non-urban. Women were asked about their current marital status, the highest educational qualification they had completed, and their income.

Health care utilisation

Women were asked to indicate how many times they saw a GP, medical specialist (orthopaedic specialist or neurologist or rheumatologist) and/or physiotherapist for their back pain in the previous 12 months. Additionally, women were asked to

nominate the reasons that were important in their decision to consult a health practitioner. The list of reasons included: pain relief; to improve mobility; to improve function; relaxation or stress relief; and general well-being. Women were asked to rate (i.e. excellent, very good, good, fair, poor) their: access to GPs, medical specialists and/or physiotherapists for the treatment of back pain; access to a female GP, medical specialist and/or physiotherapists, if this was their preference; length of wait and quality of care received by the health practitioner

Back pain

Women were asked to indicate the amount of time (years) they had back pain and how frequently they experienced back pain, in the previous 12 months. They were also asked to rate out of 10 (where 0=no pain and 10=worst possible pain), the intensity of their typical back pain in the previous 12 months.

Statistical analyses

Bivariate associations between consultations with a health practitioner and various categorical variables were assessed using a chi-squared test. A logistic regression model with consultation with a medical practitioners' as the dependent variable and back pain frequency, years with back pain, and back pain intensity as the independent variables, as well as the confounder variables of the area of residence, education, marital status and income was conducted.

Results

Of the 1,310 women in the study, 56.5% (n=738) had consulted a GP, 16.2% (n=213) had consulted a medical specialist, and 37.3% (n=488) had consulted a physiotherapist for their back pain in the previous 12 months.

A GP and/or a medical specialist was consulted by women for the following symptoms/conditions related to their back pain: back pain (56.2%); leg pain or sciatica (39.7%); sleeping problems (36.9%); anxiety/tension (27.9%), pins and needles/numbness (27.7%); neck pain (27.6%); fatigue (25.5%); depression (25.1%); muscle spasm (23.6%); headaches/migraines (23.0%); stiffness (21.6); arm pain (19.1%); weakness (15.7%); nausea (12.7%); and instability (7.1%). Of the 951 women who consulted a GP or a medical specialist, 772 (81.1%) did so for pain relief, 342 (35.9%) for general wellbeing, 314 (33.0%) to improve mobility, 262 (20.0%) to improve function, and 145 (15.2%) for relaxation or stress relief.

A physiotherapist was consulted by women for the following symptoms/conditions related to their back pain: back pain (68.0%); neck pain (45.5%); leg pain or sciatica (39.3%); stiffness (32.2%); muscle spasm (22.3%); arm pain (21.3%); pins and needles or numbness (17.6%); headaches or migraines (13.9%); weakness (8.8%); instability (5.5%); and other problems (14.1%). Of the 488 women who consulted a physiotherapist, 333 (68.2%) did so for pain relief, 415 (85.0%) to improve mobility, 313 (64.1%) to improve function, 86 (17.6%) for relaxation or stress relief, and 127 (26.0%) for general wellbeing.

A total of 47.7% of women rated their access to a medical specialist as very good or excellent whilst 9.7% rated this as poor. The amount of time for a GP consultation was described as very good or excellent by 42.3% of women, whilst 6.7% considered this to be poor. The length of wait to get a GP appointment was rated as

very good or excellent by 23.4% of women and poor by 16.7% of women, but the majority of women considered the GP consultation(s) to be very beneficial (26.2%) or beneficial (18.2%). However, 59.5% of women did not find their medical specialist beneficial.

When answering the question on access, 44.6% of women who wanted to consult a physiotherapist rated their access as very good or excellent, whilst only 6.2% of women rated their access as poor. The length of wait to obtain a physiotherapist appointment was rated as good or excellent by 35.4% of women and very poor by 8.5% of women, with the majority of women considering the physiotherapy consultation(s) to be very beneficial (41.8%) or beneficial (26.6%). However, 31.6% of women did not find their physiotherapist beneficial.

Table 1 presents the associations between consultations with a GP for back pain within the previous 12 months and various back pain characteristics. A statistically significantly greater percentage of women who consulted a GP had regular or continuous back pain compared to women who did not consult a GP (73% and 32% respectively) ($p<0.001$). Women who consulted a GP had a statistically significantly higher mean typical back pain intensity (mean=5.98, SD=1.74) compared to women who did not consult a GP (mean=4.34, SD=1.85) ($p<0.001$). Further, after adjusting for area of residence, education, marital status and income, women who consulted a GP for their back pain were 3.98 (95% CI: 2.83, 5.59) times more likely to have regular or continuous back pain and have 42% (OR=1.42; 95% CI: 1.28, 1.56) higher typical back pain intensity levels, compared to women who did not consult a GP ($p<0.001$).

The associations between consultations with a medical specialist for back pain within the previous 12 months and various back pain characteristics are shown in Table 2. A statistically significantly greater percentage of women who consulted a medical specialist had regular or continuous back pain compared to women who did not consult a medical specialist (84% and 43% respectively) ($p<0.001$). Similarly, women who consulted a medical specialist had a statistically significantly higher mean typical back pain intensity (mean=6.27, SD=1.83) compared to women who did not consult a medical specialist (mean=4.82, SD=1.92) ($p<0.001$). Further, after adjusting for area of residence, education, marital status, and income, women who consulted a medical specialist for their back pain were 5.66 (95% CI: 3.24, 9.90) times more likely to have regular or continuous back pain and have 25% (OR=1.25; 95% CI: 1.09, 1.42) higher typical back pain intensity levels, compared to women who did not consult a medical specialist ($p<0.001$).

Table 3 presents the associations between consultations with a physiotherapist for back pain within the previous 12 months and various back pain characteristics. A statistically significantly greater percentage of women who consulted a physiotherapist had regular or continuous back pain compared to women who did not consult a physiotherapist (63% and 47% respectively) ($p<0.001$). Further, after adjusting for the area of residence, education, marital status, and income, women who consulted a physiotherapist for their back pain were 1.63 (95% CI: 1.17, 2.28) times more likely to have regular or continuous back pain compared to women who did not consult a physiotherapist ($p=0.004$).

Discussion

In this paper, we have reported the first national, representative study of women's back pain care in Australia, focusing on the self-reported medical and allied health care utilisation and formal and informal integration of health care services among the 59-64-year-old from the 1946-51 cohort of the Australian Longitudinal Study on Women's Health. As outlined below, our analysis revealed interesting findings among Australian women suffering from back pain and their health care utilisation and reasons for consulting a health care practitioner.

As context for our findings, Medicare is Australia's universal health care scheme which primarily subsidises medical costs for citizens and permanent residents. Health care in Australia is also provided by private medical practitioners and by private or public hospitals paid by the private insurance or government agencies, and the balance by the patient (Australia, 2010). Medicare users receive a benefit against health care costs for visiting a GP and medical specialists, medical investigations, and surgical interventions. In addition, Medicare provided rebates for consulting a Medicare registered allied health practitioners, such as physiotherapists. Referral from a GP is required for users to claim the rebate for allied health care visits. Medicare provides rebates for a capped number of GP referrals each year, additional visits must be paid out of pocket or by the user's private insurer, which may lead to an increase in premium costs. In the Medicare framework GPs are the primary contact health care providers, facilitating access to other health and related services and coordinating care for those with complex and chronic care needs (Becker et al., 2010; Picavet et al., 2008).

Our study found that over half of women with back pain consulted a GP, one-sixth of women consulted a medical specialist, and over one-third of women consulted a

physiotherapist suggesting that back pain suffers seek help for both medical and allied health care providers. Similarly, a study from the UK (n=2,422), reported 67.2% of chronic pain sufferers consulted a GP with 34.0% consulting a medical specialist and 25.9% a physical therapist (Haetzman et al., 2003). The high prevalence may be contributed to the design of the health care system in Australia. Studies reported that referrals for medical imaging, medical interventions, and affordability were the strong predictors for individuals with back pain consulting a medical practitioner (Chenot et al., 2008; Hurwitz et al., 2016; Macfarlane et al., 2012). A Canadian study on patients seeking help for back pain reported 83.4% of study participants consulted a medical doctor and the contributing factors for the high prevalence in seeking help from a medical doctor was the intensity of back pain and absents to work (Blanchette et al., 2016). Therefore, the high prevalence of GP consultations may be contributed due to the framework of the health care system, the intensity of back pain experienced by the sufferers, work absenteeism and seeking a referral for claiming rebates and to reduce out of pocket medical expenditure by individuals suffering from back pain.

Furthermore, the duration and intensity of pain experienced by women appeared to influence consultations with health care providers. Women were more likely to consult a GP, medical specialist and a physiotherapist if they had regular/continuous back pain but GP or medical specialist were more likely to be consulted if they had high levels of back pain intensity. Similarly, studies from France and Canada reported the intensity of back pain and age of the individual were the key predictor to seek help from a medical practitioner (Blanchette et al., 2016; Depont et al., 2010b). Further, the majority of women with back pain consulted a GP for pain relief but

consulted a physiotherapist for improved mobility and function along with pain relief. Women felt that they benefited more from consulting their GP and/or physiotherapist rather than a medical specialist. This may be due to effective pain management interventions provided by their GP or physiotherapist. A German study reported that medical specialists were consulted for imaging and surgical intervention purposes and not for pain management (Chenot et al., 2008).

Our findings suggest that GP consultations were the preferred choice for back pain care among women with comorbid conditions such as sleeping problems, anxiety/tension, fatigue, and depression. Other studies have also reported that the medical doctors were the preferred choice among individuals with back pain coexisting with other health conditions (Gore et al., 2012; Hong et al., 2013). The majority of women who visited a physiotherapist consulted for musculoskeletal symptoms related to back pain like leg pain or sciatica, stiffness, muscle spasm, pins and needles or numbness, and other back pain related symptoms. Therefore, comorbid conditions associated with back pain appear to determine the preferred health care choice by Australian women.

Our study found a high rate of referral associations between GPs and physiotherapists. Studies conducted in other countries have also reported that GPs are the primary source of referrals to physiotherapists (Hensher, 1997; Jørgensen & Olesen, 2001), with a New Zealand study reporting that physiotherapists receive 47% of referrals from GPs for accident related back pain (Love et al., 2004). Further, it has been reported that female patients were more likely to be referred compared to males (Jørgensen & Olesen, 2001). GPs were the first practitioner consulted by 74.6% of the women; the second practitioner consulted by 12.7% of the women and

physiotherapist was the first practitioner consulted by 21.7% of the women; the second practitioner consulted by 35.7% of the women. Suggesting that there were more referrals from GPs to physiotherapists but fewer referrals from physiotherapists to GPs.

Women expressed that waiting time for getting a GP and medical specialist appointment was greater than the waiting time for getting an appointment with a physiotherapist. This may be due to the ready availability of registered physiotherapists compared to GPs and medical practitioners in the workforce (Australia, 2010; Australian Institute of Health and Welfare, 2014). However, once a GP was consulted, the majority of women were satisfied with the consultation time with their GP. Women with back pain also expressed satisfaction towards care received from their physiotherapist. The debilitating nature of back pain may persuade back pain sufferers to explore health care options for managing symptoms associated with pain. Furthermore, patients personal and work circumstances and a need for reducing costs associated with medical care may be the reasons for consulting a GP for receiving referrals to visit a physiotherapist, these factors may be a focus of future research.

Integration of health care services with formal and informal integration between GPs, medical specialists and physiotherapists are effectively established in Australian health care system, the referral patterns are based on the GPs assessment of the patient condition (G. P. Davies et al., 2009). However, the intensity of back pain and comorbid conditions appear to determine the consultation patterns among patients with back pain. GP consultations were prevalent among women with back pain associated psychosomatic comorbid conditions and women with musculoskeletal

symptoms consulted a physiotherapist. As the scope of this study was unable to determine the causes of back pain and whether psychosomatic factors or the musculoskeletal symptoms were the causes of back pain. It maybe worth considering a formal cross-referral system, wherein medical specialists and physiotherapists refer patients with comorbid conditions to a GP if they were the first practitioners to be visited.

When interpretation our study findings, it is important to be aware that the visits to GPs, medical specialists and/or physiotherapists for back pain were self-reported and therefore the results may be potentially affected by recall bias. Despite this, ALSWH is a respected source of data for epidemiological research in Australia, and this limitation is countered by the insights provided the opportunity to analyse a large, nationally representative sample of older women with back pain.

Conclusion

Australian women with back pain expressed satisfaction towards care received from their GP, medical specialist and/or physiotherapist. Women were more likely to consult with a GP, medical specialist or physiotherapist if they had regular or continuous back pain. In addition, women were more likely to consult with a GP or medical specialist if they had high levels of back pain intensity. Women were more likely to consult a GP if they had psychosomatic comorbid conditions associated with back pain. Women were more likely to consult a physiotherapist if they had musculoskeletal symptoms related to back pain. Women were more likely to visit a GP and a physiotherapist for pain relief. It is important that future research to further investigate the consultation and referral patterns of Australian women with back pain for better planning of health care responses for back pain care.

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Table 1: The association between consultation with a general practitioner for back pain and back pain characteristics

Characteristics		Consulted a General Practitioner: Yes (n=738) %	No (n=518) %	p-value	Odds Ratio*	95% C.I. *	p-value*
Back pain frequency	regularly / continuously	73	32	<0.001	3.98	2.83, 5.59	<0.001
	rarely / intermittently	27	68		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		19.7 (13.0)	21.4 (13.2)	0.028	0.999	0.998, 1.00	0.051
Back pain intensity (typical)		6.0 (1.7)	4.3 (1.9)	<0.001	1.42	1.28, 1.56	<0.001

* Adjusted for area of residence, education, marital status, and income

Table 2: The association between consultation with a specialist for back pain and back pain characteristics

Characteristics		Consulted a Medical Specialist: Yes (n=213) %	No (n=757) %	p-value	Odds Ratio*	95% C.I.*	p-value*
Back pain frequency	regularly / continuously	84	43	0.001	5.66	3.20,9.90	<0.001
	rarely / intermittently	16	57		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		19.5 (12.2)	21.1 (13.1)	0.103	0.998	0.997,1.00	0.149
Back pain intensity (typical)		6.3 (1.8)	4.8 (1.9)	0.001	1.25	1.09.1.42	0.001

*Adjusted for area of residence, education, marital status, and income

Table 3: The association between consultation with a physiotherapist for back pain and back pain characteristics

Characteristics		Consulted a Physiotherapist: Yes (n=488) %	No (n=666) %	p-value	Odds Ratio*	95% C.I.*	p-value*
Back pain frequency	regularly / continuously	63	47	<0.001	1.63	1.17, 2.28	0.004
	rarely / intermittently	37	52		1.00	—	
		mean (SD)	**mean (SD)**				
Years with back pain		20.9 (13.5)	20.3 (13.1)	0.510	1.000	0.99, 1.001	0.539
Back pain intensity (typical)		5.5 (1.9)	5.0 (2.0)	<0.001	1.09	0.99,1.19	0.054

* Adjusted for area of residence, education, marital status, and income