Impact of Men’s Sheds on the Health and Wellbeing of the Men Involved: A Biopsychosocial Study

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Dedication

In memory of my beloved parents Joel Hlambelo and Senzeni Moyo

Also dedicated to my grandfather, Philemon Hlambelo and my best friend Mqamu who died during my PhD studies.

This one is for you all!
Acknowledgements and Thanks

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Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

LUCKMAN HLAMBELO
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Abstract

The Australian Government has made a commitment to improving the health and wellbeing of Australians and reducing health inequalities across the population. As part of this work, a stronger understanding of the crucial role of social determinants in influencing health and wellbeing outcomes for both men and women has been gained. In recent years there has been increasing awareness and concern regarding the burden of illness experienced by men hence at both Commonwealth and State levels, men’s health policies and strategies have been developed to address the major health issues faced by men. Men’s Sheds are of particular interest and, in recent years, an increasing number of men have become involved in them for social inclusion. Men’s Sheds are community-based, non-profit and non-commercial organisation whose primary function is the provision of a safe and friendly environment where men are able to work on meaningful projects at their own pace in their own time in the company of other men. However, the impact of participating in Men’s Sheds on the health and wellbeing of the men involved remains under-acknowledged, under-researched and mostly unintegrated with the health system. This mixed methods study provided an opportunity to explore and document the impact of social inclusion provided by Men’s Sheds on the health and wellbeing of the men involved.

The qualitative study aimed to explore and interpret the lived experience of 15 men involved in Men’s Sheds. The philosophical hermeneutics of Gadamer (2004) and the ideas of van Manen (2001) underpinned this study. The meaning and understanding of the everyday experience of men involved in Men’s Sheds was sought through interpretation of the participants’ stories. Data were generated using in-depth interviews audio-recorded from participants. The interviews were transcribed verbatim and analysed, then interpreted using phenomenological methods. The two themes to emerge from the participants’ experiences are: Being-valued-in-an-everyday-world and Being able to recover readily from life’s adversities. The theme of Being-valued-in-an-everyday-world arose from the sub-themes of the awareness of self and Being valued and appreciated. The theme Being able to recover readily
The findings of this qualitative study provide insight into the experiences of men involved in Men’s Sheds. It is hoped that this interpretation will make a significant contribution to the advancement of men’s health by having health professionals consider how Men’s Sheds provide vital psychosocial resistance resources for the men at risk of developing many chronic noncommunicable diseases. It is not intended as a prescription therapy for all men but draws the reader to reflect on aspects of the Men’s Sheds in providing social support and how this may impact on individuals’ experience when faced with stressful situations. The limited scope of this qualitative study and the dearth of available research in this area suggest that much more research needs to be undertaken.

The purpose of the quantitative study was to complement the qualitative study by determining if participation in Men’s Sheds improves physiological and psychological measures of stress in men involved. All outcome measures were collected at baseline (beginning of involvement in Men’s Sheds) as well as after six months participation in the Men’s Sheds, using the same procedures. The primary outcome was the standard deviation of the normal-to-normal interval (SDNN) component of heart rate variability (HRV). Secondary outcomes included additional HRV parameters, cortisol levels, blood pressure, heart rate and psychological indices (i.e. state and trait anxiety and health-related quality of life (HRQoL)).

Linear mixed-effects models (LMM) revealed that SDNN increased after participation in Men’s Sheds ($p = 0.013$) suggesting lowered sympathetic and increased parasympathetic nervous system activity (i.e. reduced physiological stress). A significant but modest relationship was observed between most HRV parameters and participating in Men’s Sheds. The participants exhibited significantly decreased low frequency (LF) Power ($p = 0.04$) and increased high frequency (HF) Power ($p = 0.00$), and reduced low-to-high frequency (LF-HF) ratio ($p = 0.01$) and the proportion of the number of pairs of successive beat-to-beat intervals that differ by more than
50 ms (NNpNN50) \((p = 0.03)\). Other HRV measures failed to change. Morning and evening cortisol levels were significantly reduced. These effects were independent of age, marital status and frequency of attendance in Men’s Sheds. There was no association between anxiety or HRQoL and HRV measures. These findings indicate that participation in Men’s Sheds may reduce physiological and psychological stress. Robustly designed randomized controlled trials are required to confirm these findings and inform men’s health practice and health promotion for men at risk of social isolation.

The adoption of mixed methods research allowed this thesis to achieve evidence triangulation and complementarity. Both approaches produced evidence in support of Men’s Sheds as a strengths-based initiative, which improves the health and wellbeing of the men involved. The qualitative study provided the means to explore the ways in which social inclusion provided by Men’s Sheds reduced anxiety and stress, phenomena that were objectively tested and verified in the quantitative study. The quantitative results added to the evidence that belonging to the Men’s Sheds can modulate cardiac autonomic tone by enhancing the vagal activity and reducing the sympathetic activity, which complemented the qualitative findings. Overall, these findings confirm the biopsychosocial model of Men’s Sheds and are in line with the view that a major characteristic of a holistic approach to men’s health is creating environments that are genuinely concerned with fostering their health.

This thesis makes a contribution to the development of mixed methods research in the field of men’s health and, indeed, in the area of health research in general, by providing an example of how qualitative and quantitative approaches can be integrated to investigate a research question. Specifically, it exposes the false dichotomy between “qualitative” and “quantitative” approaches by showing that the complexity of the human reality and including perhaps, especially, the study of health is enriched by combining the two approaches. This thesis advocates that clinicians and men’s health practitioners learn to utilize and to appreciate both qualitative and quantitative research. In so doing, they will develop into pragmatic
researchers who understand the complexity of many different factors that influence health.
Chapter 1 Background and Aims of the Study

1.1 Introduction

In recent years, the health of Australian men is an issue that has been gaining overwhelming attention both public and political (Commonwealth of Australia, 2009; Department of Health & Ageing, 2010; Macdonald, 2011; Saunders & Peerson, 2009; Smith & Bollen, 2009). Australian men suffer a health differential that is skewed toward higher mortality and morbidity rates for some preventable diseases (Australian Institute of Health and Welfare, (AIHW), 2013). For instance, in comparison to women, men have an increased mortality for cardiovascular diseases, depression and suicide. Data from the 2008 National Health Survey indicates nearly three out of four persons who died from heart attacks before age 65 were men (AIHW, 2009). Suicide is also a major public health problem in Australia. It is one of the leading causes of death for men under 30 years and over 75 years (Gilchrist, Howarth, & Sullivan, 2007; Snowdon & Baume, 2002). This is a tragic loss of life and causes terrible grief for the loved ones left behind.

Part of the cause of this male disadvantage may be cultural. For example, some variants of masculinities and gender socialization pose a double whammy of poorer health behaviors and lower use of health care (see, for example, Broom & Tovey 2009; Courtenay, 2000; Houle et al., 2015; Robertson 2007; Roy & Tremblay, 2013; Tremblay, 2012). However, much of it lies beyond these cultural constructions. Indeed, sociological theories relating to the social construction of gender (e.g. West & Zimmerman, 2009) and masculinity as social practice (Connell, 1995) have been strongly influential in explaining men’s poor health. For instance, some forms of masculinity such as hegemonic masculinity have been linked to a men’s health discourse is that ‘real men’ are supposedly unconcerned about health matters (Courtenay 2000; Gray et al., 2002); hence some men are said to be reluctant to seek help. There is, however, need to move beyond some of the narrow characteristics
related to these cultural constructions. The central aim of this thesis is neither to neither collapse nor explore how these constructions of masculinity may relate to, and shape, men's health. It offers an expanded view of men's health, which can be best understood in terms of a combination of biological, psychological (thoughts, emotions, and behaviors), and social (socio-economical, socio-environmental, and cultural) factors.

Currently, men’s health is predominantly the domain of the professionals working with a biomedical model, which is a model of care practised by doctors and other health professional and is associated with the diagnosis, cure and treatment of disease (McPhee, Papadakis, Rabow, & Education, 2010). While it is acknowledged that the biomedical model makes essential contributions to men’s health, namely the treatment of specific diseases, this thesis questions its effectiveness in other areas. In particular, the thesis questions the appropriateness of an exclusively biomedical approach in facilitating the growth and maintenance of health as it often focuses on male pathology and individual risk factors. Viewing men’s health in terms of gender constructions and health and pathology and individual risk factors is important but does not provide all the perspectives required for building resilience and fostering health. The research presented here is a response to an obvious need for an empirical study, rooted in an ecological perspective that recognises the importance of men’s environments and the multiple contexts that influence their lives (Macdonald, 2005; Smith, 2010). It also recognises the resilience of men and focuses on their strengths, potentials, interests, abilities, knowledge and capacities rather than their limits or weaknesses. In other words, it focuses on factors that build and maintain men’s health as opposed to those that cause disease.

The significance of adopting a more positive orientation towards health, as opposed to illness and disease, has long been recognised within the field of men’s health (Brown & Macdonald, 2009; Herlof, 2008; Hollnagel, Malterud, & Witt, 2000; Macdonald, 2005; Paulik, 2010; Vo & Park, 2009). In Australia, this paradigmatic shift is observed in some policies and programs in place that target male health, which have begun moving beyond male pathologies, whether clinical or social. For instance
the current Australian National Male Health Policy is “distinguished by two main characteristics: firstly, its adoption of a strengths-based approaches to males and their health and secondly (and relatedly), its endorsement of a social determinants approach” (Macdonald, 2011, p. 82). This paradigmatic shift has highlighted the significance of community-based health promotion programs, which acknowledge the valuable roles men play in the society and offer supportive environments to men and their families (Department of Health and Ageing, 2010; Macdonald, 2005). Clearly, this is a move away from harmful pathologising of men to focus on a ‘strengths-based approach’ to men’s health.

In this line of thinking, the key to improving men’s health lies within identifying resources that set out to foster health and not just deal with disease or pathologies. For instance, promotion of social inclusion and connectedness is an identifiable phenomenon in both policy and public health discourse (Department of Health and Ageing, 2010; Macdonald, 2006; Smith, 2007). It has been observed that men tend to have smaller social networks and weaker interpersonal connections with family and friends than women (Ajrouch, Blandon, & Antonucci, 2005; Dykstra & Fokkema, 2007; Thompson & Whearty, 2004; Ye, Williams, & Xu, 2009). These scholars agree that this increases chances of men becoming socially isolated. This, again is known to increase stress (Cacioppo, Hawkley, & Thisted, 2010), which may affect somatic health in various ways, for instance through the endocrine or immune system, or both. Clearly, interventions that mitigate stress and/or increase social inclusion and connectedness are required to foster men’s health and wellbeing.

Men’s Sheds are a recent phenomenon unique to Australia. They provide ‘men’s spaces’ where men retreat from the hectic pace of work, life and family to make or repair things and to enjoy the company of other men (Misan & Sergeant, 2009). The space is both welcoming and nurturing, providing an opportunity for men, and people who work with men, to engage their concerns in a partnership mode and in a non-pathologising manner (Morgan, Hayes, Williamson, & Ford, 2007). The support offered to men by other men adds to the uniqueness on Men’s Sheds.
There are over 900 Men’s Sheds across Australia with a combined membership of more than 150,000 and growing at around four sheds per week (see the Australian Men's Shed Association website). Men’s Sheds are found across the regional, rural, remote and urban areas. Sheds in urban areas have tended to be larger and involve somewhat younger men compared to regional, rural and remote sheds (Australian Men's Sheds Association (AMSA), 2015). The movement has spread very recently to New Zealand, the United Kingdom, Ireland, Finland and Greece (Golding, 2011; Golding, Kimberley, Foley, & Brown, 2008; Irish Men’s Shed Association, 2013). Members informally describe themselves as ‘sheders’ and the act of participating in Men’s Sheds as ‘sheding’.

Men join Sheds often following retirement, retrenchment or unemployment in pursuit of new social activities and opportunities for social inclusion. Although in the past Men’s Sheds tended to cater for the needs of English speaking, retired men, who often had some trade experience, in recent times membership is open to anyone and a broad cross-section of men are involved in Men’s Sheds. These include the young men, unemployed men, older men, retired men, men suffering from dementia or Alzheimer's and disengaged men and Indigenous men. Although the sheds are inclusive and open to Indigenous men, the majority of the sheders are mainly non-Indigenous. It is important, however, to highlight that there is a push to funding more indigenous Men’s Sheds, with successful models seen in the Northern Peninsula Area of Queensland and across the Northern Territory (Misan & Sergeant, 2009) and the Shed in Mt Druitt, Sydney, a collaboration between the Western Sydney University and the local community. This is a significant milestone considering the strong link between increased isolation and major health issues for Indigenous men (Misan & Sergeant, 2009).

The majority of the participants tend to live in the suburbs or locations surrounding the shed, and the number of members per shed varies. An average shed has between 25 to 95 members, although large numbers have been reported in sheds located in town centres (AMSA, 2015). AMSA as the peak body assists various sheds
with member recruiting and management tips and ideas. Member recruitment in the sheds often involves advertising and referrals.

In May 2010 the Australian Government identified Men’s Sheds as an important community health innovation, which helps alleviate social isolation. As a result, the Australian Government invested over $3 million to support the AMSA develop national infrastructure aimed at ensuring its future sustainability (Department of Health and Ageing, 2010). AMSA administers the funds through the Australian Government Shed Development Program (NSDP) on behalf of the Department of Health and Ageing to provide direct financial assistance to Men’s Sheds across Australia with priority given to those sheds in areas of greatest need (AMSA, 2015). Under the NSDP, the Australian Government has allocated $800,000 to provide direct financial assistance to Men’s Sheds across Australia and plus $375,000 for Aboriginal and Torres Strait Islander shed activities (AMSA, 2015). The NSDP allows Men’s Sheds and organisations supporting a shed to apply for up to a total of $8,000 for a range of financial aid across three funding categories: Tools & Equipment; Building Maintenance & Development; and Activities & Programs (AMSA, 2015).

The specific activities that take place in Men’s Sheds vary from place to place. In general, they offer social activities and friendships for their members (AMSA, 2014). They typically provide a space for ‘hands on’ practical activities where men can work on woodwork or metal work projects, with other men, in an informal and relaxed environment. The building or the Men’s Shed facility the members occupies is important because it provides the physical infrastructure that members need to keep their tools, pursue their interests, learn new skills and complete their projects. Above all, it provides men with a personal space in which to socialise and build their space. However, researchers know relatively little about the pathways through which supportive environments created in Men’s Sheds manifest in improved health outcomes. The dearth of research in this aspect is, unfortunately, limiting the understanding of this phenomenon.
Given the important role that men involved in Men’s Sheds play, often as both volunteers and participants, their perceptions of social inclusion provided are likely to be important in determining their salutary effect. Qualitative studies analysing social support interventions report that social support is an important predictor for coping with difficult circumstances and adjusting to the psychological as well as social demands placed on an individual (Rankin et al., 2014; Razurel, Bruchon-Schweitzer, Dupanloup, Irion, & Epiney, 2011). Several studies also indicate that perception of close supportive relationships is positively correlated with the overall psychosocial wellbeing of an individual (Cheng et al., 2014; Ferguson & Goodwin, 2010; Tian, Liu, Huang, & Huebner, 2013). Consequently, there is a need for research to examine men’s experiences of social inclusion provided by the Men’s Sheds using in-depth interviews. However, there is also a need to look beyond subjective experiences to consider the potential role of Men’s Sheds in enhancing resilience to stress and protecting against stress-related medical morbidity and mortality.

Given that perceived availability of social support is associated with cardiovascular protection (Norman et al, 2010; Thayer, Yamamoto & Brosschot, 2010; Thayer et al., 2010), it can be hypothesised that belonging to Men’s Sheds might also improve adaptive autonomic response to stress in men involved. Two subsystems within the autonomic nervous system (ANS) are particularly responsive to daily changes in life: the sympathetic nervous system (SNS) and parasympathetic nervous system (PNS). They typically function opposite to each other to maintain the equilibrium of the heart rate and blood pressure. When the SNS becomes activated by a perceived threat, the hypothalamic-pituitary-adrenal (HPA) axis, and the sympathetic-adrenal-medulla (SAM) axis immediately release hormones that increase heart rate and heart contractility.

The hormone cortisol is considered to be the main effector released by the HPA axis activation and is actively involved in the regulation of blood sugar, blood pressure, anti-inflammatory function and regeneration of cells in the body and immune function (Uchino, 2009). However, its prolonged release causes blood glucose and lipid levels to rise while the action of insulin is inhibited. This may result in chronic
hyperglycemia and hyperlipidemia, which are well-known antecedents to atherosclerosis, hypertension, diabetes mellitus and coronary artery diseases (Boer-Martins et al., 2011; Reynolds et al., 2010). Thus, the evaluation of cortisol levels in men involved in Men’s Sheds is of clinical significance.

The parasympathetic activity influences decrease in heart rate and heart contractility (Karim, Hasan, & Ali, 2011). The continuous changes in the sympathetic-parasympathetic balance results in periodic fluctuations in heart rate. On a standard electrocardiogram (ECG), the variations are presented by an upward deflection of a normal QRS complex\(^1\), or more specifically the distance between two adjacent R-wave peaks, which is termed as the R-R interval. This temporal variation between sequences of consecutive heartbeats is known as heart rate variability (HRV).

HRV analysis has become an important and a non-invasive procedure for analysing cardiovascular autonomic influence rate (Task Force of the European Society of Cardiology, 1996). Depressed HRV has been linked to abnormal cardiovascular autonomic modulation and is an important predictor of myocardial infarct, and sudden cardiac death, and all-cause morbidity and mortality (Ablonskyte-Dudonienn et al., 2012; Al-Zaiti, Fallavollita, Canty, & Carey, 2014; Harris, Stein, Fung, & Drew, 2014). Thus, a high HRV is thought to protect from cardiovascular diseases and is considered a strong indicator of health and wellbeing in the general population (Soares-Miranda et al., 2014). Clearly, analysis of HRV in men involved in Men’s Sheds is of clinical significance. Thus, reduction in cortisol levels associated with an increase in resting HRV secondary to participating in Men’s Sheds would indicate better health status and reduced risk of chronic disease and early mortality.

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\(^1\) QRS complex is a name for the combination of three of the graphical deflections seen on a typical ECG. A Q wave is any downward deflection after the P wave. An R wave follows as an upward deflection, and the S wave is any downward deflection after the R wave. These deflections reflect the depolarization of the right and left ventricles of the heart (Camm et al., 2006).
1.1 Purpose of the Study

The purpose of this mixed methods study was to examine the impact of participating in Men’s Sheds on the health and wellbeing of the men involved. In order to do this, the study examined men’s experiences of social inclusion provided by Men’s Sheds and explored the impact of participating in the sheds on the parasympathetic control of heart function and dysregulation of the HPA axis. The specific aims of this thesis were as follows:

1) To explore and interpret the lived experience of men involved in Men’s Sheds, developing a description of how the social inclusion provided impacts on their health and wellbeing;

2) To implement a non-randomised one-group pretest-posttest study to evaluate the effect of participation in Men’s Sheds on resting HRV, cortisol levels and additional health-related outcome measures in men involved; and

3) To contribute to the emerging body of literature on the social determinants of health and strengths-based approaches to men’s health. As a nurse, I was particularly interested in knowledge that can be used by health care workers to better understand their male clients.

On the whole, the seeds for this study were planted approximately ten years ago. I come to this study with the belief that my background and my experiences shape how I see and understand the world around me. I accept that I cannot easily put aside my pre-existing knowledge about the health impacts of grass-roots initiatives that provide social inclusion for men, nor seek to do so. When I look back, my thinking about this research originates primarily from being in my family and my practice as a registered nurse. Hence, in the following paragraphs, I indulge in a little autobiography, and I strive to understand myself more fully as a prerequisite for this type of research as the literature holds (Gadamer, 2004).

I was born in Zimbabwe, and my parents were migrants from Swaziland hence they called both Zimbabwe and Swaziland their home. We lived in the same village as my father’s parents. Grandpa Philemon had a successful career as a long distance bus
driver; who used to crisscross the dangerous pothole-filled roads of Southern Africa, either carrying genuine passengers or liberation war fighters who were crossing into either Rhodesia (Zimbabwe) or South Africa fighting wars to liberate those countries. However, I did not enjoy much time with him as he died when I was still a young boy. I was told he suffered tremendous stress and depression following his retirement. My father was a mechanical engineer who worked hard to pay for our education, so it seemed I was always destined to go into a professional career. Growing up I was always empathetic, and my mother thought I would be a good district nurse. Ultimately that is what I became.

Unfortunately, none of my parents lived long enough to see where my education would take me in life. I had often been compelled to reflect on my father’s experiences before he died and eager to understand the links between social inclusion provided by group membership and health. In the mid-1990s, I witnessed my father’s sudden deterioration in health soon after he was retrenched. I distinctly remember him narrating how he felt valueless without his job and his work friends. He got depressed and eventually turned to alcohol. He was diagnosed with diabetes, depression, anxiety and hypertension. He barely participated in any meaningful activity. Indeed, the social and economic system of the day forced him into social isolation. He was stripped of the things that made him his usual self; without his job and a group of supporting friends, he felt lonely and worthless. He was stressed.

Fortunately, he got involved with a local men’s group in the mould of a Men’s Shed. Surprisingly, though reassuringly, soon after his involvement with this group of men, his physical and psychological health significantly improved. He spoke of positive social interactions and the support that he got within the group. To him, the men’s group was undeniably a health-building venture. Although, he did not use the words, he indicated that the social support and validation he got from the group restored his sense of identity and enhanced his wellbeing. He even became a coach for a local soccer team and prided himself for leading his team to a premiership win in 2000. Although he eventually died in 2006, nonetheless, his involvement in this social inclusive project added some years and quality of life into his otherwise ‘short life'.
Now the questions kept (and continued) coming for me. What was the nature of the social inclusion provided by this group of men? How was it for him to be involved in this group, and what impact did it have on his health and wellbeing? Alternatively, was (is) it my own awkwardness that raised these wonderings for me? On reflection, I see how I silenced the things I never heard. However, not knowing how to open such conversations with my father or anyone, I rather preferred to let things slip quietly into the background of my life. As a Registered Nurse I have encountered many other men in similar circumstances, yet have never stopped to ponder things so deeply before.

My first job as a Registered Nurse took me back to the hospital in my hometown. After that, my nursing career took me across three continents. Being a nurse subtly influenced my understandings of the critical role of social determinants of health such as social support on health outcomes, particularly in men. Looking back, I see I was too ready to clinically solve everyday problems for the patients under my care. I think I was too quick to use my nursing and medical knowledge to ‘fix up their problems.’ At the time, I was mindful of being medical-oriented. On reflection, my knowing about the nursing and medical processes got in the way of my being open to considering what was not self-evident; at least not to me.

As far as I was concerned, neither grassroots initiatives such as Men's Sheds nor social determinants such as social support were more powerful than medicine. In a sense, I was right since I was taught that *medicine conquers all*, hence concepts like social support and social connectedness remained covered over. So, more often I asked objective questions, like whether the patient was in pain or had any problems. I got specific answers. My nursing practice with all patients was mostly about helping them overcome their everyday health problems within a medical model approach. Having trained under the British nursing syllabus, nursing was all about “the use of clinical judgement in the provision of care to enable people to improve, maintain, or recover health, to cope with health problems, and to achieve the best possible
quality of life, whatever their disease or disability, until death." (Royal College of Nursing UK, 2010).

Amidst all my nursing experience, one event stands out as making me think about my thinking. My travels had taken me to Sydney, Australia where I found work at a tertiary referral hospital in the Aged and Extended Care. Being a Clinical Nurse Consultant, I provided patient-centred consultancy practice within a mixed clinical environment. This involved assessing patients with complex nursing issues in liaison with the treating medical teams. I also designed individual care plans for the most complex patients.

There, I met Rob. He was in his early 80s, widowed, and living alone. Nurses had reported him as feeling depressed soon after the Aged Care Assessment Team (ACAT) conducted an assessment and deemed him suitable to be placed in a nursing home. During the day, Rob would always tuck himself in bed and seemed always to be lost, wanting to do nothing. How would he improve his mobility if he did not mobilise? My professional ‘knowing’ led me to do a psychosocial assessment. I expected the assessment to expose Rob’s risks of depression so that I could make the most urgent referral to the psycho geriatricians or, at least reveal the level of care he now needed.

Rob described how he did not feel valued and cared for and that he was now being forced into a nursing home. He narrated that for him, life had become dull and stressful, experienced in deep isolation, and the transition to a retirement home added to his misery. According to him, all he needed was a supportive environment where he would still be productive and live much longer. In the real sense, he wanted to add years to his life by belonging to a supportive social network and experience connectedness with others. Rob wanted to be discharged to Melbourne to live with a friend who was involved in a Men’s Shed. He too wanted to be involved in the shed. I quickly found out more about the shed movement. At the moment, my unspoken assumptions were brought to the fore. Rob showed me what I had been
unable, or perhaps unwilling to hear, the role of social support and social interaction on health.

As he sat on the edge of his bed staring at me, my father and my grandpa’s feelings of loneliness were mirrored in his eyes, yearning to tell someone how social isolation contributed to their ill health and subsequent deaths. Also, as he spoke about Men’s Sheds, my father’s experience of social inclusion provided by the men’s group was rekindled. My desire was ignited to gain an understanding of the impact of Men’s Sheds on the health of the men involved. Now I was in Rob’s space; he was not in mine. I carry Rob’s story with me. It is with me throughout my nursing career where I have spent more than ten years directing nursing care activities. I only hope all the nurses will experience their own ‘Rob’ on their journey of nursing. Therefore, I have been conscious of the impact of Men’s Sheds from these experiences and keen to explore the concept more systematically to investigate whether social inclusion provided by Men’s Sheds promote men’s health.

In subsequent discussions with my potential doctoral supervisor Professor John Macdonald, the relationship between Men’s Sheds and men’s health was well thought-out as a potential study at postgraduate level, especially as it was understood within a ‘strengths-based’ and ‘social determinants’ of health approach (Macdonald, 2005, 2006; 2011; Xanthos et al., 2012). The potential role of social inclusion provided by Men’s Sheds in modulation of psychological stress in the lives of men was another concept that interested us. As well, our thinking was shaped by awareness of the relative neglect of strengths-based initiatives in men’s health in favour of biomedical approaches. Thus, I have no desire to contribute to the ‘deficit approaches’ that beleaguer the understanding of men’s health.

1.2 Theoretical Framework

The biopsychosocial approach provided both the base and guidelines for this thesis. This research focused on the potential for benefit to the health and wellbeing of Men’s Sheds on the men involved based on holistic perspectives like the salutogenic

A focus on health assets such as social inclusion provided by Men’s Sheds represents a health-oriented, as opposed to a disease-focused, perspective. Importantly, a health-orientated approach is congruent with the core tenets of salutogenesis, a core theory underpinning this study. Salutogenesis is a concept grounded in understanding the social factors that are perceived to create and sustain health, in contrast to those that cause illness and disease (Antonovsky 1979, 1987, 1996). Therefore, the distinction between pathogenesis and salutogenesis proposed by Antonovsky provides a useful framework for explaining the philosophical and ontological underpinnings of Men’s Sheds. The salutogenic theory is particularly important as it offers a paradigmatic shift away from the pathogenic focus of biomedically-orientated men’s health research, thus further locating the thesis within a strengths-based and health-orientated epistemology. The theory of salutogenesis also formed the framework for data analysis.

I then draw on Axelrod’s (1981; 2006) work on ‘Tit For Tat’ (TFT) in his theory of cooperation and Nash’s equilibrium theory (1950) to describe the benefits of social groups. Taking this analysis into a Men’s Shed specific setting, I follow Axelrod’s idea that individuals can behave cooperatively for a higher prize. He describes TFT as the most successful strategy in-group cooperation when compared with the self-benefit dilemma. The very notion of the theory of cooperation is that linked group members repeatedly interact with each other with the outcome of the cooperation being better for the group. Similarly, Nash’s equilibrium theory (1950) maintains that even when a group uses non-cooperative work, knowingly or unknowingly, an equilibrium point will always exist where group benefit will persist. This he argues is due to individuals accumulating experience and, as a result, becoming cooperative.

This study also considered the relationship between psychological variables and the neuro-immune-endocrine network known as psychoneuroimmunology (PNI) as is
studied in the discipline of psychology. PNI addresses how psychological factors influence physical health and immune system and has been a platform for systemically studying the complex interactions between organisms and their environment (Ader, Cohen, & Felten, 1995). It is important, however, to highlight that the examination of the immunological processes is outside the scope of this research. In saying this, further description and specific evidence concerning interrelation between participating in Men’s Sheds and immunology might be part of post-doctoral follow-up research.

Finally, I use Abramson (1989) hopelessness depression theory. According to Abramson (1989), facing a constant period of frustration may generate feelings of loss of control, which may cause depression. However, the salutogenic influence of a supportive environment on physical and psychological wellbeing is an identifiable phenomenon (Giesbrecht et al., 2013; Macdonald, 2005). Abramson (1989) hopelessness depression theory is used in this thesis to examine whether interactions in the sheds counteract the feelings of depression.

### 1.3 Overview of Research Methodology

A mixed methods design was chosen, described as a convergent parallel design (Creswell & Plano Clark, 2011), which adopted a pragmatic ontological worldview. This ontological perspective acknowledges the existence of a single reality with multiple interpretations of that reality. In this design, both qualitative and quantitative data were collected during the same phase of the research and then the two data were merged during the final interpretation. In this way, the different data set on the same topic proved to be complementary in understanding the research problem better (Creswell & Clark, 2011). Complementarity enabled me to “illuminate quantitative results with the qualitative findings by mixing the results in order to develop a more robust understanding of the problem (Creswell & Clark, 2011, p.77).
The qualitative part of the study is about men’s experiences. It examined the lived experiences of belonging to Men’s Sheds and how these experiences impacted on health and wellbeing. Understanding of these experiences was developed through in-depth interviews I held in 2013 and 2014 with 15 men involved in Men’s Sheds. Accordingly my research questions were directed towards experiences of being-in-the-world as a man involved in Men’s Sheds and explaining how this impacted on one’s health and wellbeing. Being-in-the-world meaningfully relates to people’s everyday practices in their worlds (Heidegger, 2008a). The concept through which these phenomena were connected and consequently interpreted and understood was that of salutogenesis. Antonovsky’s salutogenic theory as a pathway to health promotion is the site where Men’s Sheds and health intersected and dwelt in the lives of the men involved.

The quantitative part of the study was a non-randomised one-group pretest-posttest study evaluating the effect of Men’s Sheds on resting heart rate variability (HRV), cortisol level and additional health-related outcome measures in a sample of men (n=33) involved. The study compared these outcomes on participants at the beginning of their involvement in Men’s Sheds and at six months follow-up. To evaluate autonomic sympathetic and vagal tone, time and frequency domain analysis of HRV were used in accordance with procedures developed by the Task Force for Pacing and Electrophysiology (1996). Cortisol levels were assessed in saliva. Secondary outcomes included resting hemodynamic measures (resting heart rate and blood pressure) and psychological health status, which was assessed through the Medical Outcomes Trust Short-form 36 Health Status Questionnaire (SF36)(Stewart, Hays, & Ware, 1988) and the State-Trait Anxiety Inventory (Spielberger & Reheiser, 2004).

Immediately after collecting both strands of data, I started data analysis by using traditional qualitative procedures to search for themes emerging from the data and, and, at the same time, I started traditional quantitative data analysis. For qualitative analysis, I used thematic and narrative analysis as some of the data were produced in narrative form, and I treated these data as a whole. For quantitative analysis, I
used descriptive data analysis and then conducted a statistical analysis using LMM to model the relationship between participation in Men’s Sheds and the dependent variables. When both qualitative and quantitative data analysis were completed, I merged and consolidated the findings. Various data matrices were constructed as described by Creswell and Plano Clark (2011). Displaying data this way allowed me to combine, or converge, the individual findings from the qualitative and quantitative data analyses. The reason for choosing a mixed methods approach for the present study was to provide a complete understanding of the impact of Men’s Sheds on the health of the men involved.

1.4 Outline of the thesis

One story is told throughout the pages in this thesis. The story is a whole. Each chapter tells one part of the story, yet none stands apart from the others. Together they make up the whole. Stepping into the detail is the only way to get to the point of grasping the whole. To guide the way, Chapter 1 serves to introduce the research problem and the necessary background and context in which this research sits. Chapter 2 reviews the relevant academic literature that has played a role in the development of this thesis and locates it within relevant academic contexts. I locate the thesis within a ‘social determinants’ of men’s health discourse, which argues that meaningful men’s health requires a biopsychosocial approach in which the interlacing of biological, psychological and social, and cultural factors is critically. Informed by sociological and PNI perspectives, I review the historical and sociopolitical influences that have created the biomedical hegemony and the consequent marginalisation of systems that focus on prevention or maintenance of health. My intention is to locate Men’s Sheds in relation to these socio-historic events and influences.

Chapter Three gives an account of the variance between holistic and reductionist perspectives on health and illness. Underpinning this discussion is the work of medical sociologist Aaron Antonovsky (1987) whom I introduce in this chapter. I also introduce the theoretical work of the American political scientist Robert Marshall
Axelrod (1943-) on the evolution of cooperation, Nash’s (1950) equilibrium theory and Abramson’s (1989) hopelessness depression theory to lay the theoretical foundations for the later chapters. In the final section of this chapter, I discuss the relevance of the Men’s Shed movement in providing a meaningful model for health prevention and maintenance.

As already mentioned, mixed methods research was adopted as the research methodology in this thesis. Chapter four discusses in detail the methodological choice, explaining why mixed methods research was chosen in the present study including its benefits. Moreover, it outlines the overall research design. In particular, three important decisions in designing mixed methods research are addressed, namely, implementation, weighting and mixing decisions. Finally, this chapter discusses the reliability and validity of the convergent parallel design adopted in this study.

Chapter Five outlines the particular qualitative research approach implemented to conduct the first part of this research project. Here, interpretive phenomenology and hermeneutics, as informed by Gadamer are discussed as paradigms for explaining how people make meaning from their experiences. This is followed by a presentation of the design and methods. The processes of participant selection and recruitment, the format of the interviews, and the techniques of data analysis are outlined. The role of narratives in structuring and ordering personal experiences could not be underestimated; thus the description of the narrative analysis is done on the basis of its logical connection with narratives.

Many voices influenced the qualitative part of this thesis. I cannot locate and foreground all that has influenced the development and implementation of this qualitative study. Yet, through adoption of a self-reflexive attitude, my pre-understandings (Andersen, 1995), my prejudices (Ray, 1994), are relevant in the context of the study and became part of the horizon from which I interpreted the phenomena under investigation. I have documented these pre-understandings as best as I can and have placed them before the texts of the interview dialogue. They
The purpose of Chapter Six is to use the men’s voices of their experiences of social inclusion provided by Men’s Sheds to describe the main themes as they emerged from the thematic analysis. The themes are ‘being-valued-in-an-everyday-world’ and ‘being able to recover readily from life’s adversities’, which emerged from the interpretation process. These themes and their constituent sub-themes developed the concept of ‘regaining resistance resources and sense of meaningfulness’ as a result of participating in Men’s Sheds.

The overall findings of the qualitative study and limitations of the study are provided in Chapter Seven. The chapter compares and contrasts the participants’ perspectives with the relevant literature. Some recommendations for policy and practice are outlined, and areas for further research are suggested. The chapter makes explicit the unique findings and contribution of the qualitative findings of this study.

Chapter Eight presents a comprehensive account of the quantitative component of this thesis. Designs that are longitudinal are aptly suitable for obtaining data required for the evaluation of program effects and identification of factors contributing to differential patterns of change across groups as they follow individuals or groups over time. Thus, the Chapter provides a justification for implementing a nonrandomized one-group pretest-posttest design to evaluate if
participation in Men’s Sheds could improve the levels of physiological stress. This chapter contains thorough descriptions of the intervention and the study protocols including the methods for participant selection and the data collection and ethical considerations.

Chapter Eight also provides an outline of the statistical analysis in sufficient detail to assist the reader in drawing conclusions about the findings. Key issues, such as methods for data preparation and data quality assurance; definitions of variables considered in the analyses, including descriptive variables and description of and justification for bivariate and multivariate analysis choices are disclosed. This chapter also discusses the empirical results of the quantitative study. Chapter Nine presents the merged results of the in-depth interviews, evaluation of resting HRV, cortisol analysis, resting blood pressure and heart rate and survey research instruments. Chapter Ten concludes this thesis. It presents the overall study findings and a summary and comprehensive integration of the data. This information is presented in a manuscript that integrates the qualitative and quantitative findings of this study: the final but important requirement of this mixed methods research. It offers a discussion of the strengths, limitations and applications to theory and practice offered by the research.

1.5 Chapter Conclusion

This chapter has presented a background to the research and has introduced the research questions and aims. Men’s Sheds are certainly spreading and rapidly proliferating both in Australia and internationally. Research is, therefore, required to understand their impact on the health of the men involved, and this project is aimed at that. The conceptual and theoretical frameworks have been outlined, and the study design briefly described. By using a mixed methods approach, this thesis aims contribute to a better understanding of the health impacts of Men’s Sheds. This chapter has also outlined the structure of the thesis, highlighting what is to follow in the next nine chapters. With the foundation laid, Chapter two will now present a review of the relevant literature relating to Men’s Sheds and variables studied with
the aim of answering the described questions and establish a specific area to which this Ph.D. contributes complementary knowledge from the biopsychosocial perspective.
2 Chapter 2, Men’s Health and Men’s Sheds: Terminology and Context.

The purpose of this chapter is to define the key terms and to describe the background contexts of the thesis topic. Sociological and psychological perspectives underpin this chapter. Definition of key terms and concepts used in this study is provided in Section 2.1. A description of the models of health and health promotion is provided in Section 2.2. A brief overview of men’s health in Australia is provided in Section 2.3. Section 2.4 outlines the 2.4 describes the Australian Male Health Policy and its emphasis on social determinants and strengths-based Primary Health Care (PHC) programs to improve men’s health. The potential of the Men’s Sheds in enhancing the health and wellbeing of the men involved is described, and further research is recommended to evaluate this claim. Section 2.5 summarizes the Chapter.

2.1 Terminology and Concepts

2.1.1 Men’s Sheds

Men’s Sheds are places typically located in a shed or workshop-type space in a community setting aiming to support positive social interactions amongst men (Golding, 2006; Golding & Harvey, 2006b). The Australian Men’s Shed Association (AMSA), the peak body for Men’s Sheds in Australia, takes a broad definition of men’s sheds as:

“...any community-based, non-profit, non-commercial organisation that is accessible to all men and whose primary activity is the provision of a safe, friendly and healing environment where men are able to work on meaningful projects at their own pace in their own time in the company of other men. A major objective is to advance the well-being and health of their male members and to encourage social inclusion.”
2.1.2 Health as defined in this thesis

Health is conceptualised in various ways, which often complicates its definition. Nordenfelt (1984) accurately summarises this problem:

*The entire medical enterprise - theoretical and clinical research as well as medical practice - has human health as its ultimate end. Health, as well as disease and illness, must be in the focus of medical attention. In spite of their central place, however, and in spite of numerous efforts directed to the clarification of the concepts of health and disease, there is far from universal agreement about their nature. In fact, the controversies are quite profound. One encounters anthropological, sociological, psychological, and biological theories, as well as combinations of these. The contents of the various theories are quite different and often quite difficult to compare.*

Nordenfelt (1984, p. xiii)

The debate on the meaning of health is regrettably polarised between 'naturalism' and 'normativism'. As will emerge in the following analysis, this formulation is too coarse and in fact too thick for productive discussion. Nevertheless, as a first approximation, naturalists contend that the human body comprises many organ systems that have natural functions from which they can depart in many ways (Boorse, 1975, 1997). Some of these departures are harmless or beneficial, and these are called healthy states, but others are not and are called 'diseases' (Scadding, 1990). So to call somebody healthy involves both a claim about the normal functioning of all bodily system and a judgment that the resulting functioning is a good one. Furthermore, the naturalists claim that the determination of bodily function or malfunction is an objective matter, which can only be determined by science (Boorse, 1997). This view is very popular in biomedical medicine.

Conversely, normativists such as Margolis (1976), (Goosens, 1980) and Engelhardt (1996) challenge the position of the naturalists. Rather, they believe that healthy states are those states we desire and, diseased states are those we want to avoid (Ereshefsky, 2009). Thus, the focus is on whether a psychological or physiological state is valued or disvalued (Ereshefsky, 2009). Although normativists accept that disease categories refer to known or unknown biological processes they deny that these processes can be identified independently of human values by, for example, a
science of normal human nature. They claim that the scope of the concept of health is ultimately tethered to the individual’s cultural/social context. Parsons’ definition of health illustrates this:

*Health may be defined as the state of optimum capacity of an individual for the effective performance of the roles and tasks for which he has been socialized. It is thus defined with reference to the individual’s participation in the social system. It is also defined as relative to his “status” in the society, i.e. to differentiated type of role and corresponding task structure, e.g., by sex or age, and by level of education which he has attained and the like.*

Parsons, (2010)

Some would say surely the concept of health is inescapably normative; for example, the ways we think about how we should live. Sometimes we even think about joy for its health benefits rather than as an end in itself. This observation is supported by the works of Nordenfelt, himself a normativist, who advanced that while health and happiness are not identical, they are "vital goals," in opposition to a biological understanding of the term "vital" (1987, p. 76). Nordenfelt believes health is a fundamentally an evaluative notion. I would also agree with the normativists’ view of health on the stronger point that a theoretical notion of health must contain the evaluative dimension, that is, it must be linked to the good of a subject. Otherwise, mere biological conditions or states take precedence over the general wellbeing of the person, which cannot be reduced to or identified entirely with these states.

If we extend the notion of health beyond the biological functioning to include not just the “physical environment but the social, cultural, economic and psychological and spiritual worlds of people, then the same axiom can apply: health is situated in the homeostasis to be maintained in all of these interacting worlds” (Macdonald, 2005). Leading health bodies have also offered similar views. In 1946, the World Health Organisation (World Health Organisation, 1946)'s (WHO) offered the famous declaration, which carries this congruity deep within its core. Health, it acclaims, *is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.* This simple idea of health as tethered to the individual’s cultural/social context seems to be the most useful way of thinking of health.
It seems that normativists are advancing a satisfactory account of health, which makes it the product of an individual’s engagement with their world. This legitimises the claim that health should be seen as being promoted by the creation of environments that foster it or is damaged by lack of such environments (Macdonald, 2005). The point to press here is that people’s contexts are distinct and importantly different. Furthermore, this is perfectly compatible with the WHO document called The Solid Facts (Wilkinson & Marmot, 1999) acknowledgement that health lies squarely where people live and work. Therefore, for the purpose of this thesis, unless otherwise explicitly stated, when I use the term “health” I mean to invoke a very broad but holistic understanding of health; one that is much broader than one typically finds in ordinary language-use. That is; I will be using “health” as a “dynamic interaction between the life-force of human beings and their environment” (Macdonald 2005, p.82).

In this usage of health, I am also following the most influential medical sociologist, Aaron Antonovsky, whom, as will soon be discussed, consistently had the courage to show how health develops by interaction between the individual and their environment. In my view, such a holistic usage of health is thus needed for a helpful interpretation of, and for an efficient evaluation of the social inclusion provided by Men’s Sheds on the health of the men involved.

2.1.3 Wellbeing

In this study, wellbeing has been conceptualised broadly and linked very closely to the participants’ social contexts, with considerable attention being paid to their transactional and social relationships with others. The view that wellbeing is inextricably linked to the social context is succinctly put by Manderson (2005) when she states “wellbeing is not the state of individual bodies but of bodies in society.” Manderson argues that wellbeing includes more than physical and mental health’ but that it “incorporates a sense of satisfaction, contentment, personal fulfilment
and existential calm; much more so than health, it is a social construct” (2005, p.4). I agree with this conceptualisation as it recognises that while wellbeing might be an outcome, it is experienced and interpreted by individual people within particular social contexts. This conceptualisation is consistent with the definition of health outlined above in regards to the importance of the context in the lives of the people. Therefore, when I talk of wellbeing in this thesis, I will be referring to psychological, physical and social states that are distinctively positive (Huppert, 2009).

It is important also to highlight that there are two contrasting approaches to understanding the wellbeing of the individual person, namely hedonic and eudaimonic. The hedonic approach associates wellbeing with subjective happiness and defines wellbeing within the experience of pleasure versus displeasure broadly construed to include all judgments about the good or bad elements of life (Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001). The eudaimonic approach, on the other hand, focuses on meaning and self-realisation and defines wellbeing in terms of the degree to which a person is fully functioning (Deci & Ryan, 2008).

Whilst contention regarding hedonic and eudaimonic pathways continues, there are many current eudaimonic philosophers who agree that eudaimonia can be investigated as a subjective experience hence the quality of one’s life as a whole, which is eudaimonic wellbeing, has been investigated subjectively (see, for example, Tiberius (Tiberius & Hall, 2010; Waterman, 2008). Waterman (2008) argued that contemporary psychological approaches needed to consider one’s daimon (i.e. one’s true self) and the context of the functions, values, and behaviours that engender it, which is to say, consider both subjective wellbeing (SWB) and hedonic approaches to more comprehensively understand the wellbeing of the people. Supporting this argument, Delle Fave and Bassi (2009) suggest that at times an individual may be healthy and functioning well, despite not feeling good in their life and vice-versa. Such arguments have indeed led to many agreeing that eudaimonia and hedonia “should not be treated categorically, nor considered mutually exclusive, but rather that hedonia and eudaimonia operate in tandem, in a synergistic fashion” (Henderson & Knight, 2012, p.201).
In this thesis, I integrated the two approaches as a means to more comprehensively understand the wellbeing of the study participants (Henderson & Knight, 2012). I agree with philosophers adopting an hedonic perspective when they equate wellbeing with the positive emotional states such as experiences of pleasure, carefreeness, and enjoyment (Diener, 2009; Waterman, 2008). At the same time I agree with Aristotle’s objective conception of eudaimonia which holds that life is judged from the outside, according to whether it was a life of excellence and virtue (Aristotle, 1985; Keyes & Annas, 2009). Thus, in this thesis simple subjective scale measures of wellbeing and information about the conditions associated with that wellbeing were used. These scales and methods are discussed fully in the methodology chapters.

2.1.4 Social Inclusion as Used in this Thesis

Social inclusion is a term used to describe the process where “all people feel valued, their differences are respected, and their basic needs are met so they can live in dignity” (Cappo, 2002). Its antonym is social exclusion, which is the process of being shut out from the social, economic, political and cultural systems that contribute to the integration of a person into the community (Hayes, Gray, & Edwards, 2008). Social inclusion is a social determinant of health (Wilkinson & Marmot, 1999). For decades, it has been known that social networks are health protective (Berkman & Syme, 1979).

Evidence suggests that greater social inclusion is linked to improved health and wellbeing (Allen, Lim, Walker, Croager, & Tham, 2013; Heffner, Waring, Roberts, Eaton, & Gramling, 2011; Repper & Perkins, 2003; Wilkinson & Marmot, 1999). People who belong to a social network are more likely to feel cared for, loved, esteemed and valued, which strengthens the body’s immune system and so helps the person resist disease and, potentially adds years to life (Macdonald, 2005). As will be discussed in chapter 3, physiological investigations have demonstrated
positive social interaction can counteract the negative effects of stress. Therefore, in this thesis, I focus on the use of belonging to a supportive social network on the one hand and the experience of being cared for and valued on the other, as a means to understand social inclusion processes in Men’s Sheds.

2.1.5 Psychological Stress

Psychological stress refers to the emotional and physiological reactions experienced when environmental demands are perceived to tax or exceed one’s adaptive capacity (Hogh, Hansen, Mikkelsen, & Persson, 2012). Examples of stressful situations include a death of a loved one, social isolation, chronic illness, unemployment or financial crises. Confronting any of the above situations if the demands go beyond the individual’s coping resources can evoke a stress response:

*Whether it is positive or negative, stress causes a reaction in the body. It affects the cardiovascular, digestive, and musculoskeletal systems. Stress is the primary cause of headaches, backaches, indigestion, nausea, heart attacks, hypertension, ulcers, colitis, constipation, diarrhea, diabetes, allergies and arthritis. Stress has also been linked with psychosomatic illnesses, enuresis, anorexia nervosa, and alcoholism.*

Greenberg & Valletutti, (1980, p. 2)

The hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic-adrenal-medulla (SAM) axis are two endocrine pathways within the sympathetic nervous system (SNS), which are particularly responsive to stress. When the SNS becomes activated by a perceived threat, these pathways immediately release hormones such as cortisol, which serves to restore homeostasis or adaptation to this disturbance (Gaab, Rohleder, Nater, & Ehlert, 2005).

2.1.6 What is Cortisol?

Cortisol is a steroid hormone, more specifically a glucocorticoid, produced by the adrenal cortex in response to stress. It is considered a reliable biomarker of stress (Benfield, Newton, Tanner, & Heitkemper, 2014). Its main effect is to increase blood
glucose and lipid concentrations in order to provide the energy substrates required to generate skeletal muscle contractions (Gaab et al., 2005). While these adaptive consequences of acute stress-induced HPA axis responses are essential to restore homeostasis, chronic secretion of cortisol has been shown to exert detrimental long-term effects on health (Monaghan & Spencer, 2014). It has been suggested that, in susceptible subjects, chronic cortisol secretion can lead to hyperglycemia and hyperlipidemia (Appels, 2004; Black, 2003). These physiological states are well-known antecedents to cardiovascular diseases including atherosclerosis, hypertension and type 2 diabetes (Black, 2006).

To date, assessment of cortisol in saliva is widely accepted as it has proven a valid and reflection of the circulating hormone in the blood (Kudielka, Gierens, Hellhammer, Wüst, & Schlotz, 2012; Wang, Sánchez, et al., 2014). After cortisol is released into the blood stream, most is bound to cortisol-binding globulin (CBG), with only five to ten per cent remaining as unbound or free cortisol (Henley & Lightman, 2011). The unbound cortisol rapidly enters saliva by passive diffusion through the cells of the salivary glands (Henley & Lightman, 2011; Owen, 2013). Thus, salivary cortisol is a useful surrogate for circulating free cortisol and has become a valuable alternative to blood-borne analysis due to its non-invasiveness. In this thesis, cortisol levels were assessed in saliva and procedures are discussed in the methodology chapters.

2.1.7 Heart Rate Variability (HRV)

Heart rate variability (HRV) is the physiological phenomenon of the temporal variation in the time interval between heartbeats. Tracing of heartbeat on a standard electrocardiography (ECG) consists of five deflections, arbitrarily named P wave, a Q, R, S complex and a T wave (Wagner, 2008). A healthy heart will have an orderly progression of the QRS complex, which begins with the downward deflection of a Q wave followed by a P wave. An R wave follows as an upward deflection, and finally, the S wave deflects downward after the R wave. The duration between two adjacent R wave peaks is called the RR interval and the resulting time between
adjacent QRS complexes attributed to sinus node depolarizations or the instantaneous heart rate is termed the NN (normal to normal) interval. The time between beats (NN varies considerably in a healthy person. This is due to the interaction of the sympathetic and parasympathetic nervous systems working to modulate heart rate in response to physiological demand. The variation in the time between heartbeats is the HRV.

Evaluation of HRV has become a popular tool for assessing the activities of the autonomic nervous system as it reflects the interaction between sympathetic and parasympathetic activity in autonomic functioning (Reed, Robertson, & Addison, 2005). The beat-to-beat variations (NN variations) are analysed by two primary approaches: time domain analyses and frequency domain analysis (Task Force of the European Society of Cardiology, 1996). Time domain measures are related to the time in milliseconds between a series of successive NN (normal to normal) intervals. Frequency domain or spectral measures assign bands of frequency and then count the number of NN intervals that match each band (Godoy et al., 2014; Task Force of the European Society of Cardiology, 1996).

Common time-domain variables that can be calculated include the following: standard deviation of the NN interval (SDNN), which reflects the overall variations within the R-R interval series. The standard deviation of the average NN interval (SDANN), which is an estimate of the changes in heart rate due to cycles longer than 5 min. The square root of the mean squared differences of successive NN intervals (RMSSD) and the percentage of the number of interval differences of successive NN intervals greater than 50 ms (pNN50) (Task Force for Pacing and Electrophysiology, 1996). An increase in SDNN, SDANN, RMSSD and pNN50 measures suggests a reduction in physiological stress (O’Donnell, Landolt, Hazi, Dragano, & Wright, 2015). Frequency domain variables include high frequency power (HF) from 0.15 to 0.4 Hz, low frequency (LF) power from 0.04 to 0.15 Hz, and the very low frequency (VLF) power from 0.0033 to 0.04 Hz. An increase in HF power and a decrease in LF power suggest a reduction in physiological stress (Mazurak, Enck, Muth, Teufel, & Zipfel,
Specific HRV measures examined in this study are described in detail in Chapter 8.

2.1.8 Hypertension

High blood pressure or hypertension is a severe medical condition. It is characterised by a systolic blood pressure (SBP) of 140 mm Hg or higher and a diastolic blood pressure (DBP) of 90 mm Hg or higher (Blumenthal, Sherwood, Gullette, Georgiades, & Tweedy, 2002). Although the exact etiology of hypertension remains speculated, years of research have found that a myriad of factors, specifically psychosocial factors such as stress play a role in its development (Chiumento, 2008; DiTomasso, 2003). Although medical treatment is essential, good management of psychosocial stress can ward off its onset. It is for this reason that social support plays a critical role in the development or prevention of hypertension (Bell, Thorpe, & LaVeist, 2010).

In this thesis, I make the argument that improving men’s health outcomes requires a broad approach, which incorporates the role of biological, psychological and socioeconomic variables. I use particular terms, such as the biomedical model of medicine, social model of health, Primary Health Care and the Ottawa Charter of Health Promotion. I define my use of these terms in the next section.

2.2 Models of Health and Health Promotion

2.2.1 Biomedical Model of Medicine

The biomedical model of medicine is derived from the positivistic philosophy of Descartes and is characterised by an institutionalised, scientific, and technologically directed approach (Helman, 2007). It is the predominant model used by physicians in diagnosing and treating diseases. The biomedical model is focuses on the cure, not care, and seeks to control “dysfunctions of the body-physical by controlling the
cellular molecular level” (Watson, 1999, p.132). This reductionism inherent in the biomedical model treats the body as a machine and the disease as a mechanical problem (Engel, 2013). In other words, systems of healing tend to be similar to mending a broken down machine.

While this paradigm has had success “in dealing with some major human conditions of disease” (Macdonald, 2005, p.5), it has ignored the prevention and the promotion of health and healthy environments. Explained later in this chapter, a confluence of sociopolitical factors has led to the development of the biomedical hegemony. Consequently, non-medical interventions, especially those that are not linked to the curative health care system are marginalised. Underlying the biomedical model of medicine’s powerful position is its claim to “expert” knowledge and reliance on the use of “doctrine of specific aetiology” (Annandale, 1998, p.7). The tendency to focus on one cause whereby psychosocial approaches to health are eschewed in favour of biological theories and treatments has likely inhibited non-medical interventions to health promotion (Annandale, 1998).

2.2.2 Social Model of Health

The social model of health is a conceptual framework within which improvements in health are attained by addressing the social determinants alongside biological and medical factors (Bircher & Kuruvilla, 2014). Highlighting the importance of the interaction between biological and psychosocial factors in defining the potentials for a person’s health and wellbeing, the model includes the possibility for people to consider themselves healthy despite having biomedical problems. In other words, biomedical problems alone cannot define one’s health, but one needs also to consider environments, which foster personal potentials to function well enough to lead a meaningful life even in the presence of a medical illness. This position, I suggest, is particularly useful for the biopsychosocial context of this thesis. It is useful because it is contrary to the narrow biomedical view of health systems. In these, western medicine is not considered as one health system among many, “but
the standard to which all other [health] systems should aspire" (Cunningham & Andrews, 1997, p.12).

There are several approaches with the social model of health, which attempt to address social, environmental and economic factors that affect health alongside biological and medical factors. These include the Ottawa Charter for Health Promotion (World Health Organisation, 1986) and Primary Health Care (Macdonald, 2013). How these approaches are defined and incorporated into many health programs will vary within different socio-political contexts. What is important is that they both focus on moving beyond the limitations imposed by the narrow biomedical framework to address the broader social determinants of health.

2.2.3 The Ottawa Charter for Health Promotion

The Ottawa Charter is a strategic document designed to provide a broad framework for “enabling people to increase control over and to improve their health’ (World Health Organisation (WHO) 1986, p. 1). Health promotion, as described in the charter, is centred on empowerment of the people to increase their control over the determinants of health, and thereby increase their health (WHO, 1986). There are five action areas in which empowerment can occur:

- building healthy public policy
- creating supportive environments
- strengthening community action
- developing personal skills
- reorienting health service

Therefore, the principles of empowerment that underlie the Ottawa Charter for Health Promotion framework are useful in this thesis to examine the capacity of Men’s Sheds to promote the health of the men involved.
2.2.4 Primary Health Care

There are two different ways that the term Primary Health Care (PHC) has been applied and defined. On the one hand, definitions are drawn from broad public health explanations, which encompass a comprehensive range of preventative, diagnostic, therapeutic, and rehabilitative services and processes. On the other hand, some definitions are drawn from health service provision within formal health services (Pedersen & Wilkin, 1998). This thesis draws on broad public health definitions of PHC, as these definitions are more appropriate in explaining the community development principles that underpin the Men’s Shed movement.

The World Health Organisation Alma-Ata declaration of 1978 defined primary health care as:

*Essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.*

According to Macdonald (2013), in many developing countries PHC is well established and is the primary form of health care. In some circumstances, this is because health care based on the biomedical model is inaccessible or unaffordable. On the other hand, “there is almost total ignorance about PHC” in the developed world, and where it is mentioned, “it is equated to primary medical care” (Macdonald, 2013, p.13). In Australia for instance, there is still homogeneity in the use of the terms PHC and Primary Care. This is exemplified by the Australian government’s bold claim that “primary health care is mainly delivered in more than 7,000 GP practices across Australia” (Commonwealth Government of Australia, 2011, p. 3). In reality GPs services are based on the biological model of health, with some
behavioural change programs grafted on (Baum, 2008). Therefore, the term ‘Primary Care’ is problematic, and I do not use it in this thesis to describe Men’s Sheds.

My central concern with the term Primary Care, as also argued by the Australian Nursing Federation (ANF) (2009), is that it did not originate from within the Alma-Ata declaration of 1978. The ANF suggest the term was endorsed by the biomedical elite to “disguise the transformative potential of strategies and approaches that can make the fundamental changes necessary to improve health status outside the traditional domain of health” (2009, p.6) Importantly, what seems to be the central tenet underpinning the ‘Western’ Primary Care construct is its approach, which predominantly privileges providers, largely, the GPs, and the management of disease and injury (ANF, 2009). For biomedical practitioners, the term Primary Care is convenient and linguistically efficient. However, I would argue that for genuine PHC practitioners, it fails to reflect the expanded vision of health, which adopts universal, community-based preventive services, with substantial community involvement.

2.3 Context: Men’s Health in Australia and Western Health Care Practices

Australian men have higher age-adjusted death rates than women for the ten leading causes of death, excluding those biologically determined areas of female reproductive health (AIHW, 2013). For instance, men are estimated to be twice as likely as women to commit suicide (Alston, 2012; Gilchrist et al., 2007). In 2008, of the 1,799 deaths by suicide that were recorded in Australia, 78% were men (AIHW, 2009). Statistically, this translates to more than 20 male deaths per 100,000. High levels of suicide have also been featured as significant health issues for males internationally (Roy, Tremblay & Robertson, 2014). Such mortality is alarming, and the tragic loss of life causes terrible grief for people left behind.

Cardiovascular disease is not just the major cause of death in Australia; it is also responsible for the excess of death among men. Data from the 2008 National Health Survey indicates that nearly three out of four persons who died from heart attacks
before age 65 were men (AIHW, 2009). At the same time, studies examining cardiovascular incidences reveal that men are twice more likely to experience cardiovascular illness than women. They also report that men significantly outnumber women in hospitalisation due to cardiovascular related illness (see, Teng et al., 2011; Yeap et al., 2011).

Global recognition of the health disparities between men and women has existed for many decades. In recent years, the national and international debate on strategies for improving men’s health has included an emerging body of research advocating the need for holistic interventions (Macdonald, 2006; Smith & Bollen, 2009; Xanthos, Treadwell, & Holden, 2012). This interest has developed predominantly in response to concerns of disease-centred approaches in current Western health models, and the consequent need to establish relevant social determinants of health strategies within existing models.

A case in point is the debate about the biological causes of suicide, one of the leading causes of death for men, within the biomedical model. The biological perspective emphasizes the role of bodily processes and temporary physiological malfunction in suicide mortality (Mullins et al., 2014; Pawlak et al., 2014). Specifically, disturbances caused by genetic defects, injury or infection are advanced as major causes of suicide. This debate has generated significant inter-disciplinary concern about its suitability as a framework for addressing suicide. In this way the biomedical diagnostic category, suicide, can be understood as an exemplar, or the site for the paradigmatic tensions between reductive/disease and non-deficit/strengths-based positions on men’s health care.

Contentions that there is a lack of a systemic view of health, which include the biological and the consequent ‘medicalisation of suicide’ underpin concerns mentioned above. Thus, redefining men’s health within a broader context is necessary. Macdonald and colleagues’ stance on the application of a life context of
male suicide provides an example of this position. They argue that it would be unwise to look for a “specific aetiology” or one causal factor. Rather, it is often the messy interplay of several factors interacting with each other, which threaten men’s mental health and put this group at risk for suicide. They refer to this as the social determinants of male suicide (Macdonald et al., 2014).

Shabsigh (2013) suggests that the socioeconomic aspects of men’s health are now a fundamental concern, yet inconspicuous in biomedical discourse. For example, the critical review of prevailing discourses in men’s health by Macdonald (2005) reveals there is a lack of application of a social determinants of health perspective in favour of the conventional biomedical model. He suggests that the need to provide meaningful health services must be based on the understanding that “there are serious factors impacting on the life of men that lie beyond their control” (2005, p.105). In other words, the inclusion of the social determinants of health would facilitate viewing men’s health holistically and work from a multi-disciplinary framework. More so, it can help widen the perspective, for example, of health planners to incorporate strengths-based PHC initiatives that are genuinely concerned with improving men’s health.

Although there is a growing call for preventative dimensions to health programs, men’s health, as does medical practice, has had an understandable focus on pathologies and their treatment and not on strengths-based approaches. Some scholars argue that there is value in strengths-based programs, which emphasises on resilience rather than on risk behaviours and weaknesses and vulnerabilities (Brown 2008; Macdonald, 2005; 2006). Indeed, a balanced focus on fostering health and managing illness has always been an essential element of a comprehensive PHC approach (Macdonald, 2013).

The genuine concern with physical male-related health problems such as cardiovascular disease, diabetes, prostate cancer, testicular cancer and suicide is, of
course, laudable. However, balancing treatment of these pathologies with a genuine focus on factors that do not only prevent illness, but foster wellbeing is central to the notions of PHC. Remarkably, it took until 2010 for the Australian government to develop a specific men’s health policy. This occurred primarily in response to the poor men’s health outcomes as described above (Department of Health and Ageing, 2010). There were also powerful voices in Australia calling for establishing sound state and national men’s health policies (see, for example, Macdonald, 2006; Malcher, 2006; Smith, 2007).

A review of relevant literature reveals that many draft men’s health policy documents had been developed prior, but that there had been major impediments to their formal endorsement and subsequent implementation (Edwards, 1997; Lumb, 2003; Smith, 2007). Among broad issues relating to the preclusion of men’s health policy in Australia, was the lack of a well-articulated theoretical orientation to direct men’s health. Of particular concern was the application of narrow and deficit approaches to men’s health, which do not extend beyond male-specific conditions of the reproductive organs, such as prostate problems, testicular concerns and erectile dysfunction, as well as an overemphasis on the cultural constructions of masculinity (Smith, 2007).

2.3.1 The Domination of Biomedical Discourse in Men’s Health

It is not difficult to argue that the naming and framing of professional responses to men’s health often take place in a context in which the biomedical model dominates. In this context, the scientific means to describe men’s health is based on the practice of medicine, which claims to be rational, objective, and value-free (Noone & Stephens, 2008). As will be discussed further on in this section, the biomedical constructions of the disease process, immunity, and medications become more valued than alternative forms of understanding and management of ill health.
Throughout the history of the hospital-centric biological model, two interrelated processes have been used in the objectification of disease and illness, including medicalization of social life. The first process involves the removal of disease as lived experience and relocating it in anatomical pathology as the object of medical discourse. It is not difficult to argue that men’s health refers to health issues specific to human male anatomy. These often relate to diseases of the reproductive organs, primarily prostate and testicular cancer (see, for example, Schroder et al., 2012; Sengupta, 2014).

2.3.2 Men’s Health as Anatomical Pathology

The concern with physical and physiological aspects of men’s health is, of course, laudable. However, limiting men’s health to these aspects is narrow and problematic, as it does not give a balance between prevention and treatment. This is not an argument to discredit clinical medicine. Indeed, clinical medicine has been seen to work, for instance in the treatment of prostate cancer where innovative methods such as brachytherapy and external beam radiotherapy (EBRT) have been a huge success. As such, it is a hallmark of innovativeness, as it has depended on scientifically proven facts and highly developed medical technology. However, the argument is that its application of rational medicine has also reduced reliance on wellness-based systems that focus on maintaining health by addressing the social context of men.

One can argue that some men’s issues are medicalised in order to bring to the forefront one-sided biomedical approaches to control or treat ‘some’ pathologies. For example, medical practitioners tend to use standardized diagnostic criteria, such as those laid out in disease diagnosis manuals to attach a psychosomatic diagnosis, and indeed prescribe benzodiazepines to an unemployed man who presents to an Accident and Emergency Department with drug overdose because of the symptoms and the value placed on medicine. Expert medical knowledge will be championed and used for instrumental action. Thus, the “solution” to the drug overdose is to
prescribe an antidote and then teach the man to stop abusing drugs. The medical practitioners might even declare the man to be mentally ill. However, such a declaration betrays a mistaken view of reality. Regardless of the accepted biological values, the social fact remains that this man may have significant psychological stress due to unemployment or other social factors such as relationship breakdown. After being 'fixed' with drugs and counselled, the same man will be discharged back to the conditions that made him sick in the first place.

The domination of the biomedical perception is furthermore tied to the domination of the capitalist system (Waitzkin, 1978) or neoliberalism (Coburn, 2014), which a distinct stage of capitalism (Navarro, 2007). The central point here is that because, under neoliberalism, the economic liberalizations, free trade, and open markets have penetrated all spheres of life and became universal categories of society. The neo-liberal agenda for health care has not only included cutting costs to obtain a higher level of efficiency, but also presenting “health care as a commodity rather that a public good (McGregor, 2001, p.83). There has additionally been a rising factor of consumerism in health care (Craven & Hirnle, 2007 ). Healthcare has developed into an attractive market for medical technologies and pharmaceuticals (Ollila, 2005; Sismondo, 2007). Consequently, the evolution of health systems, particularly the pharmaceuticals under the neo-liberal agenda is driven by profit, which inevitably clashes with the egalitarian ideal of health distribution.

The profit-making pharmaceutical and medical technology companies act in conjunction with medical practitioners to legitimate medical interventions even for common personal and social problems (Barlett & Steele, 2006; Double, 2002). They do this through direct-to-consumer advertising, promotion of self-diagnosis (Ebeling, 2014). Some do it through funding of national campaigns aimed at improving health (for example, companies promoting early medical check-ups, prostate cancer screening and early treatment). Consequently, it has been suggested that the only way men can improve their health is by visiting their general practitioners (GP) early (Bayram, Britt, Kelly, & Valente, 2003). While this may be true and must be encouraged, as early detection and intervention are essential for disease control and
health promotion, the links with commercial interests can be seen as promoting the neoliberalism and “disease mongering” (Moynihan, Gastzsche, Heath, & Henry, 2002, p.324).

Evidently, some biomedical agendas are market driven and encourage private enterprise. Unfortunately, the need to improve the health of the least advantaged groups of men, which are less able to compete in a capitalist society, is often neglected. In a society overly concerned with profit and growth, pharmaceutical companies are actively involved in sponsoring the definition of men’s health and promoting it to both prescribers and individual. For instance, men’s health awareness campaigns are commonly linked to companies' marketing strategies to expand markets for new pharmaceutical products. The American Men's Health Week is a very good example of the above assertion. While the event may be billed as a campaign to "heighten the awareness of preventable health problems" among men and boys, AbbVie and Pfizer, the two major event sponsors and key manufacturers of testosterone replacement products have been criticised by the Cochrane Group academics as simply promoting the sale of their products (Woloshin & Schwartz, 2014).

Of course, the corporate concern with testosterone and prostate cancer campaign is understandable. However, interestingly, these campaigns have a major filament of concern: turning ordinary ailments into medical problems. For example, there are campaigns that portray baldness as a serious testosterone problem (Bassil, Alkaade, & Morley, 2009; Szymczak & Conrad, 2004). It would seem accurate to talk of a model of health promotion that advances a ‘hegemonic neoliberal agenda’, which provides access to super-profits by corporations. As Waitzkin has argued, “the exploitation of illness for private profit is a primary feature of the health systems in advanced capitalist societies” (1978, p. 267). However, this health consumer label effectively discriminates against groups of men whose spending power is, at worst, ineffectual. Therefore, I argue that framing men’s health within a biomedical model can be seen as sealing the fate of the objectification of physiological conditions.
More so, it discriminates against groups of men whose spending power is inadequate.

2.3.3 Biomedical Hegemony

The second process that has been used in objectification of disease and illness involves what can be called the biomedical hegemony. Biomedical hegemony is whereby the biomedical profession uses its legislative status and the institutionalisation of the production of medical knowledge to marginalise other forms of medical or health care (Filc, 2004; Mohyuddin, Ambreen, Naveed, & Ahmad, 2014). Indeed ‘other’ forms of health care approaches, which do not apply an epistemology that privileges the scientific/reductionist paradigm are marginalised (Kleinman, 1997; Turner, 2004). These ‘other’ forms of health care approaches have come to be known as ‘non-biomedical’ in comparison to biomedicine, which is constructed around scientifically based knowledge. It is with this status that biomedicine has established hegemonic power and legitimacy in the sphere of health care (Filc, 2004; Hardon & Moyer, 2014).

The establishment of the biomedical hegemony can be traced back to the professionalisation of biomedicine, which established licensing requirements for the medical practitioners around the mid-nineteenth century (Bradley, 2002). The rise of modernity accompanying biomedical technology and the successes of medical interventions also allowed the development of biomedicine’s dominant position within society (Hardon & Moyer, 2014; Singer & Fisher, 2007). It follows then that men’s health is also shaped by medical researchers as well as by practising physicians who typically reflect medicine’s values.

Nevertheless, voices that are critical of the dominance of biomedical science have emerged with an intensifying volume. The shifting focus is on other healing or health promotion activities outside the confines of the hospital or perhaps what Foucault
would call the “medical gaze”2. Together, these approaches “represent genuine attempts to bring preventive and treatment work closer to the community” (Macdonald, 2005, p.31). Balancing the preventative and curative wings of the health care has brought renewed attention to two related policy discourses. These are Primary Health Care (PHC) and the social determinants of health (Rasanathan, Montesinos, Matheson, Etienne, & Evans, 2009). Both prioritise health equity and also promote a broad view of health, multisectoral action and the participation of empowered communities.

There has been a proliferation of recent efforts from many actors, including countries, international organisations, academia and civil society to shape health policy around the PHC and social determinants of health discourses (see, for example, Macdonald, 2005; Rasanathan et al., 2010; WHO, 2008). The WHO document is called: *Primary Health Care, Now More Than Ever*. The Australian government has itself developed and implemented the National Male Health Policy, which has brought renewed attention to these two related paradigms. Within the policy, success in promoting men’s health will require ensuring that the broad focus of strengths-based initiatives and the social determinants is kept foremost.

**2.4 Australian Male Health Policy, Social Determinants and Strength-based Programs to Improve Men’s Health**

The reinvigoration of interest in men’s health has seen an increased focus on the social determinants discourse. As outlined in Chapter One, the Australian Male Health Policy has a broader focus than just masculinity and individual risk factors. It provides a genuine framework to identify priorities for action in improving men’s social environment, along with adopting a strengths-based approach to males and

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2 The French philosopher Michel Foucault coined the term medical gaze to describe the dehumanizing medical separation of the patient’s body from their person or identity. He uses the term in a genealogy describing draws how medicine observes and treats the body as a physical entity devoid of reference to the person (Foucault, 2012).
their health. I expand on these two characteristics as they contribute to the frame in which this present study sits on.

2.4.1 Social Determinants of Men’s Health

The Australian National Male Health Policy carries with itself a supporting document called Social Determinants and Key Actions Supporting Male Health. Social determinants of health refer to the conditions in which people are born, grow, live, work and age, including the health system (Wilkinson & Marmot, 2003). The social determinants of health perspective is broader than the biomedical model and locates health in the environmental enablers or barriers created by social structures, policies and practices. According to Graham (2009), the concept considers both to the socioeconomic factors promoting or undermining the health of individuals and populations and the political processes underlying the distribution of these factors between groups in society. The two main theoretical directions invoked by the current social determinants theorists draw substantially on neo-Durkheimian and neo-Marxist theories that explain social inequalities in health. The terms psychosocial and neo-materialist have also been used to describe these positions and will be used in this thesis.

The neo-materialist theorists proposes that lack of resources and deficits in state investment, in social services and infrastructure leads to inability to cope with stressors of life and thus produces ill health (Lindstrom, Ali, & Rosvall, 2012; Lindstrom, Merlo, & Ostergren, 2002; Raphael, 2009). Scholars adopting this theoretical approach argue that interpretation of links between income inequality and health begin with the structural causes of inequalities and do not just focus on perceptions of that inequality (see, for example, Clarkwest, 2008; Kondo et al., 2009; Marmot & Allen, 2014; Prag, Mills, & Wittek, 2014). On the other hand, psychosocial theorists place primary emphasis on psychosocial factors, and draw substantively on John Cassel and Emile Durkheim studies of how people’s perception and experience of social relations in unequal societies influence health (Cassel, 1976; Durkheim, 1992). Cassel's central hypothesis was that the ‘social environment’ alters host
susceptibility by affecting neuroendocrine function. Durkheim’s general thesis was that the level of integration of a society is related to the level of health of that society.

The psychosocial theorists consider determinants such as social support, social cohesion, and social connectedness as strength factors that reinforce social stratification in the society. They acknowledge these factors configure the health opportunities of social groups based on their placement within hierarchies of power, prestige and access to resources (see, for example, Braveman, Egerter, & Williams, 2011; Siegrist, Wege, Pühlhofer, & Wahrendorf, 2009; Stringhini et al., 2010). Therefore, according to the psychosocial theorists, the lower a person is in a hierarchy, the greater stress they experience and the higher a person is in the hierarchy, the healthier they are. This was also a fundamental conclusion of the Whitehall II study, which “showed a steep inverse association between social class, as assessed by grade of employment, and mortality from a wide range of diseases,” (Marmot et al., 1991, p. 1387).

There is now vast amount of evidence showing that the psychosocial and material factors often combine to undermine or promote health (Ahnquist, Wamala, & Lindstrom, 2012; Marmot, 2010; Wilkinson, 2010; Wilkinson & Marmot, 2003). More recently, Marmot and Sapolsky (2014) have acknowledged that material and psychosocial factors are often intertwined and must be understood as operating in ways that are temporal, multi-factorial and multi-directional. For instance, long-term unemployment threatens both financial and psychological wellbeing leading to poor health. Some of the social determinants popularized by the WHO in their document called Social Determinants of Health: The Solid Facts include: the social gradient, stress, early life, social exclusion, work, unemployment, social support, addiction, food and transport (Wilkinson & Marmot, 2003). Similarly, the Australian National Male Health Policy considered some of the determinants identified by the WHO, which included income: education, employment, injustice experienced by Aboriginal and Torres Strait Islander people, relationships, including fathering, social networks, and violence (Department of Health and Ageing, 2010).
2.4.2 Social Isolation

Loneliness is associated with lack of social support and friendships. Males at all ages tend to experience feelings of loneliness more than women, from early adulthood until old age. This is particularly the case for males who live alone or who are single parents. Males can become socially isolated and lonely when connections are lost with friends, family, workmates and community support networks. These connections can be lost for many reasons, such as through illness, disability, moving house, separation and divorce, retrenchment, retirement, and bereavement.

Older males are particularly vulnerable to social isolation, as they often live on their own, may not have access to transport, and are no longer in the workforce. However, older males have much to offer their peers and younger generations through their friendship, skill sharing, mentoring, and father and grandfather roles.

While some males may feel that they do not need friends and social networks as much as women, it is essential to make the effort to maintain interests and social contacts. This can include socialising with family and friends, voluntary and charity work, being members of sporting clubs and community organisations, attending church or other religious gatherings, or being involved in interest groups or groups such as men’s sheds and gyms. It is also essential for family, friends and communities to make contact with males who have become socially isolated.

Department of Health and Ageing, 2010

The above quote from the National Male Health Policy is worth being cited at length, since it can be seen to reflect a major issue, which affects men’s health and sits at the heart of this thesis. It has been observed that men have fewer friends and a smaller social network than women (Ajrouch et al., 2005; Dykstra & Fokkema, 2007; Thompson & Whearty, 2004; Ye et al., 2009). Some scholars think that this increases chances of men becoming excluded. This is because women are more likely to be “embedded within”, and by implication protected by, “a network of family relationships” (Phillipson, Bernard, Phillips, & Ogg, 2001, p. 230). Retirement also reduces men’s contact with others. Macdonald (2005, p.107) observes that all too often “after retirement or especially retrenchment, men experience that they are not valued”. For many, retirement becomes a solitary journey, experienced in isolation. Consequently, retirement and loss of paid work are life events that place a potential strain on the social lives of men (Brown, 2008; Hall, Brown, Gleeson, & Zinn, 2007). For some of these men, the sense of exclusion becomes even greater when
they are forced to relocate, mostly to nursing homes or hostels due to diminishing physical and mental abilities and financial capabilities (Capezuti, Boltz, Renz, Hoffman, & Norman, 2006).

Being without support from other people, and/or not being a member of any organisations or groups may reduce the chances of successful coping in difficult life situations. This again is known to increase stress (Uchino, 2006a). Several studies also show that survival rates after a heart attack may be diminished in socially isolated people. In fact, in clinical cardiology, social isolation clustering is a particularly malignant bio-behavioural risk factor for cardiovascular morbidity and mortality (Grant, Hamer, & Steptoe, 2009; Hafner et al., 2011; Luo & Waite, 2014). For instance, Hafner and colleagues found that increased cardiovascular mortality was high in men who were less social socially integrated people. Another study done in the USA found that socially isolated men had an increased risk of fatal coronary heart disease (Eng, Rimm, Fitzmaurice, & Kawachi, 2002). Inversely, then, social support can be seen as a strengthening factor, which can increase the resilience of men at risk of cardiovascular diseases.

Lack of a strong support networks, exacerbated by a combination of traumatic life events, which may include divorce, retrenchment, unemployment, loss, disability and family deaths put men under constant and chronic stress (Macdonald, 2006). In men’ studies it has been shown that lack of social support lessens men’s problem-solving abilities as explained by a narrative from a 43-year-old courier driver in Oliffe and colleagues’ study:

As soon as I see some problems come up, you worry and then it makes you depressed and you say ‘gosh’, you know, ‘how am I going to solve all those problems’ and then you feel like...you just want to die...you know, you, feel like you can’t live anymore

( Oliffe, Ogrodnicuk, Bottorff, Johnson, & Hoyak, 2010, p.3)

2.4.3 Social Exclusion

The National Male Health Policy identifies some groups of men, for instance, the indigenous, men from rural, remote areas and older men, as among the most
socially excluded in Australia. The impact of social exclusion on health has become a research and policy focus. This is very important as the concept of social exclusion is well established in feminist studies, as it will be dealt with below, with a substantial literature available to assess its usefulness in women and children’s health. However, there is a dearth of it in men’s health. Adopting a social determinant of health perspective has provided an opportunity to synthesise the lessons of the feminist literature and apply it to men’s health and wellbeing.

In most of its use, the concept of social exclusion has increasingly been conceptualised as a disadvantage; at times used both interchangeably with and in conjunction with a number of other descriptors of socio-economic disadvantage such as poverty, marginalisation and deprivation (Ireland, 2008; Sauders, 2003). For instance, the British government describes social exclusion as “a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low income, poor housing, high crime environment, bad health and family breakdown” (Social Exclusion Unit, 2001, p.10). The following discussion highlights the limitations of this view especially as it relates to men in affluent countries.

Most analysts see social exclusion as a determinant of poverty producing vulnerable groups, which experience disadvantage in complex material, cultural and socio-political ways (Orueta, 2006). Many feminist theorists would concur with this. Researchers over the past years have more and more come to define the material, cultural and socio-political disadvantage as a women’s, indeed as a feminist issue. This has been driven by the feminist writers and academics that have played a critical role in redefining research into the effects of socio-economic disadvantage and status on women’s health (see, for example, David, 2010; Dolan & Thien, 2009; Iyer, Sen, & Ostlin, 2008; Mumtaz & Salway, 2009; Wamala, Ahnquist, & Mansdotter, 2009).

The most common finding is that the burden of illness rests disproportionately on the economically disadvantaged women, especially those from a low socioeconomic
background. However, the same discourse tends to associates poor men’s health to the antecedents of hegemonic masculinity and gendered cultural constructs and ignores the poverty dimension. For instance, while Wamala and colleagues acknowledge that women are disadvantaged in terms of access to resources and power, they claim that men often demonstrate “health-damaging lifestyles, such as heavy drinking and taking risks which demonstrate a powerful masculinity” (Wamala, et al., 2009, p. 116).

All too often, one of the most certain routes to social exclusion is being a woman; hence gender has tended to be viewed as the key indicator of social exclusion (McLaughlin, Kelly, & Scullion, 2005). Consequently, social exclusion remedies have often focused on measures, sometimes quite hearty, to reincorporate women into the job market (Cebollada, 2009; Gingrich, 2008). Often men are viewed as the principal holders of economic and political power and continue to make up a large majority of corporate executives, top professionals, and holders of significant wealth (Connell, 2000). In this context, men’ social positioning is acknowledged with complex variations according to the power, privilege and social class. On the other hand, women are viewed as over-represented among the low-wage earners (Pager, Western, & Bonikowski, 2009; Seefeldt, 2010).

Consequently, practitioners have been encouraged to view the economic disadvantage of women and children as more important than that of men. The Bird and Rieker (2008) textbook on gender and health exemplifies this aspect. In an otherwise excellent chapter on poverty and economic inequality, they point out that while inequality between men and women can explain women’s health disadvantage, it is thought there is no socio-economic theory which can explain men’s disadvantage because men are recognised as the more economically and socially advantaged group. The book draws attention to social class, gender, race/ethnicity and sexual orientation. These factors, with the exception of gender, introduce the reader to the complexity and multifactorial nature of disadvantage; yet in the discussion on gender it is only women’s issues that are discussed. In reaffirming this
view, Bird and Rieker conclude their discussion on gender with the comment that economically, “gender roles advantage men” (2008, p.37).

It is disturbing that the Bird and Rieker (2008) textbook is aimed at academics, who may be informed of this view of gender and economic disadvantage and become practitioners and researchers with little or no knowledge of men’s concerns and the health challenges which they face, many of which cannot easily be traced to “masculinity”. Consequently, women occupy a much greater profile in socio-economic research as disadvantaged groups have traditionally drawn greater attention than those deemed advantaged (Braveman, 2009). Materialistic or structural explanations, however, also reveal the effects of disadvantage on men’s health. For instance, a recent survey in Australia revealed that over half of the outer regional, remote and very remote men live in areas of socio-economic disadvantage, compared to about one quarter in major cities (AIHW, 2010). Furthermore, the study concluded that aboriginal and Torres Strait Islander men, who make up a greater proportion of remote populations, were found to be also socio-economically disadvantaged compared to other Australians.

The ‘female marginalisation’ discourse further seeks to explain women's economic positioning in terms of system-level contradictions and tendencies created by the development of capitalism (Hassim, 2010; Penny, 2011). It exists as an implicit assumption supported by some general hypotheses drawn from Marxism, feminism and social positioning theory. It is beyond the scope of this thesis to delve into detail on these theories, but they are only used here as examples. The strongly gendered aspect of social exclusion is reinforced by the feminisation of poverty: particular groups of women as overrepresented among those in poverty (Parish, Rose, & Andrews, 2009). While I agree with this perspective as is evident in single female parents and elderly women (Jutting & Laiglesia, 2009; Manne, 2008), caution must be taken not to position all men, especially those from poor socioeconomic backgrounds as advantaged.
It is laudable that feminist writers and academics such as Collins (2009) and Nash (2008) have played a critical role in redefining the research into women’s social positioning, low socioeconomic status men are especially vulnerable and also suffer as a result of the social organisation precipitated by the capitalist principles. Collins (2009) is perhaps best known for her ideas of intersectionality and the matrix of domination. She powerfully argues that the social positioning of women in employment can only be understood in terms of crisscross systems of oppression. While this is a powerful argument to empower women in the workforce, clearly, it is necessary to recognise that framing employment relations within such a paradigm has contributed (perhaps unwittingly) to men and their concerns being marginalised; particularly within the academy where gendered studies of social exclusion over the years have overwhelmingly concentrated on women (see, for example, Bradshaw, 2001; Chant, 2008; Collins, Al-Dajani, Bika, Swail, & Chant, 2014; Galobardes, Shaw, Lawlor, Lynch, & Davey Smith, 2006; Greenwood, 2008; Linneker, 2003).

In an affluent country like Australia employment is not available or may never be possible for some men, for instance, the retrenched or carers of aged or disabled relatives, and also those, not in the workforce, such as the elderly, disabled and retired. Macdonald explains this point:

*In a world of shifting job opportunities, the notion of permanent employment may well be a thing of the past. Despite the discourse about the importance of men not identifying themselves too closely with their occupation, many men both see themselves and are seen by their families as the main providers, responsible for the delivery of the basic necessities of life. Permanent insecurity of job tenure in such a context is a recipe for constant stress.*

(Macdonald, 2005, p. 106)

This fact is apparent from large numbers of unemployed men throughout Australia, as well as those in many affluent countries. In Australia, for example, male unemployment compared to female unemployment over the last decade has risen, due to factors such as retrenchment and the growth of female-dominated service industry employment (Lloyd, Harding, & Payne, 2004), and this structurally separates some men from the mainstream society. There is, therefore, good reason to be cautious about overemphasising social exclusion as an exclusively feminine issue.
Further, we need to recognise not only the uniqueness of men’s social exclusion but also the importance of drawing on insights from women’s literature to fill the gaps in research. There are clear differences in modes of social exclusion between men and women. However, there are also similarities that make it possible to transfer insights, with a view to extending the present understandings and efforts to help men in need.

Social exclusion can indeed arise in a variety of ways, and it is essential to recognise the versatility of the idea and its reach. However, there is also a need for caution in not using the term too indiscriminately and selectively as warned by Sen (2000). For instance, to explain every kind of deprivation faced by women as social exclusion is insufficient. The argument is not that the female marginalisation thesis is wrong; of course, from a political economy perspective, it is undeniable that women, especially single or widowed, do face economic disadvantage (Bird & Rieker, 2008), but the marginalisation processes can be in men’s life settings too. It is can be also argued that all the principal determinants - the policy environment, the markets and modernised workforce - tend to bypass the poor men rather than work towards their development.

Guildford (2000) presents a compelling argument that neoliberal economies tend to exclude any population group by allowing wealth to accumulate unequally. Of importance, then, should be policies and practice that promote employment opportunities for people particularly men who are socially regarded by their families and society as ‘providers’ Griffith, et al., 2011; Macdonald, 2005).

From the discussion so far it is apparent that there are multiple causes of social exclusion. These continue to cut-off a proportion of men in affluent societies from full social and economic participation. Indeed, some disadvantages are clearly more vigorous than others; that is, the risk of becoming socially excluded is not dependent on only one factor. In line with this understanding of social exclusion, the aspects of social exclusion that this review concerns itself with are those which Tsakloglou and Papadopoulos (2002), Sen (2000) and Atkinson et al., (2002) call ‘multidimensional’
‘dynamic’, ‘purely relative’, and ‘relational’, rather than limiting the concept only to ‘poverty’.

Multidimensional aspects of social exclusion imply deprivation in a wide range of indicators of living standards usually, caused not only by lack of personal resources but, also by insufficient or unsatisfactory community resources (Tsakloglou & Papadopoulos, 2002). Dynamic aspects of social exclusion imply that people are excluded, not just because of their current situation, but also because they have little prospect for the future (Sen, 2000). Sen (2000) agrees with Tsakloglou and Papadopoulos (2002) that social exclusion lies beyond the narrow responsibility of the individual. Most importantly, the above authors and Atkinson et al. (2011) describe social exclusion as ‘relational’; in the sense that it causes an understandable and significant discontinuity in the relationship of the individual with the rest of society, inadequate social participation, lack of social integration and power, factors identified in the National Male Health Policy.

Social exclusion, therefore, implicates a multiplicity of causes and effects of inequality. These range from universalistic forms of exclusion such as lack of access to informal contacts, poor social networks, homelessness, lack of adequate education, poor resource linking to jobs, poor health, disability, lack of the appropriate role models, low income, unemployment and lack of services such as banks and credit facilities, which curtail participation in the exchange relations of society (Sen, 2000; Tsakloglou & Papadopoulos, 2002). Compared to poverty, which only associates inequality with the lack of material resources, these universalistic forms of social exclusion contain both descriptive and causal elements and render the concept useful in understanding men’s health issues. This contrasts with the ‘weak’ conceptualisations, which are mainly descriptive and less specific about causal agents and often fail to locate challenges experienced by men within the social exclusion discourse.

The Journal of Health, Population and Nutrition (JHPN) special issue on social exclusion has published and documented the many health risks associated with
social exclusion. These include chronic diseases, depression, substance abuse and suicide (Johnston, 2009; Koehlmoos, Uddin, Ashraf, & Rashid, 2009; Modie-Moroka, 2009; Rispel, de Sousa, & Molomo, 2009). From such volumes like that of the JHPN special issue on social exclusion and previous health research across the social sciences, we know that social excluded people are sicker and die quicker than members of the socially included population (Caxaj & Berman, 2010; Daiski, 2007; Gray, Robinson, Seddon, & Roberts, 2010; Groot et al., 2008).

A men’s study in the UK found that socially excluded men had a slower post-task recovery of systolic blood pressure. Consequently, this put them at risk for hypertension and other cardiovascular diseases. This study also found that socially isolated men had a higher cholesterol response and presented with a larger cortisol awakening response and output, factors normally associated with ischemic heart disease (Grant et al., 2009). According to the Australian Bureau of Statistics, ischemic heart disease was the leading underlying cause of death in Australia in 2009, and it accounted for 17% of all male deaths (Australian Bureau Statistics, 2010). Practitioners have also presented original research describing social exclusion and its relationship to suicide (Gilchrist et al., 2007; Snowdon & Baume, 2002). The underlying assumption is that the multidimensional aspects of social exclusion may cause stress, which affect health in various ways, for instance through the endocrine or immune system, or both.

Men under high levels of chronic stress at work are more likely to die from any cause than their peers (Chandola et al., 2008; Chandola, Brunner, & Marmot, 2006; Wang, Lesage, Schmitz, & Drapeau, 2008). A large study in the US revealed that higher mortality due to cardiovascular events and suicide was more likely in men whose business had failed; those who had been made redundant, dismissed or demoted or who had problems with co-workers (Matthews & Gump, 2002). Similarly, a longitudinal Copenhagen City Heart study also found “stress was associated with a markedly higher risk of death due to external causes, particularly suicide, among men”(Nielsen, Kristensen, Schnohr, & Gronbaek, 2008, p.486). Chronic exposure to stress inhibits the ability of the immune system to protect an individual from
diseases. As a result, persons exposed to prolonged stress become more vulnerable to illnesses ranging from infectious diseases to cardiovascular conditions (Wilkinson, 2005). This is an essential point that is worth expanding upon as physiological investigations have provided plausible pathways that drive responses to stress.

The cardiovascular system is mostly controlled by the autonomic nervous system (ANS) that plays an important role in the physiology of stress. As discussed in Chapter 1, the ANS has two branches: the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS) The SNS is particularly responsible for activating the "fight or flight" response through the HPA axis and the SAM axis while the PNS is responsible for countering the effects of these two endocrine pathways, hence is often considered the "rest and digest" system (McCorry, 2007). Table 2.0 summarises some of the distinguishing features of these two divisions of the ANS.

<table>
<thead>
<tr>
<th>Table 2. Difference between Sympathetic and the Parasympathetic Nervous Systems</th>
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<tbody>
<tr>
<td><strong>Sympathetic System</strong></td>
</tr>
<tr>
<td>Originates in thoracic and lumbar regions of the spinal cord (T1-L2)</td>
</tr>
<tr>
<td>Prepares the body for physical or mental challenge – “Fight or Flight”</td>
</tr>
<tr>
<td>Shuts down functions not critical to survival</td>
</tr>
<tr>
<td>Increases respiration and heart rate, blood pressure and blood flow</td>
</tr>
<tr>
<td>Decreases stomach movement and secretions</td>
</tr>
<tr>
<td>Dilates bronchial tubes in the lungs and pupils in the eyes</td>
</tr>
<tr>
<td>Increases urine output</td>
</tr>
<tr>
<td>Predominates during the day when there are increasing demands</td>
</tr>
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Source: Adapted from McCorry (2007)
During emergency “fight-or-flight” reactions and exercise, the HPA axis and the SAM axis immediately release hormones that prepare the body for physical exertion (McCorry, 2007). Cortisol, the main effector released by the HPA axis, increases the flow of blood that is well oxygenated and rich in nutrients such as glucose and lipids to the tissues that need it, in particular, the working skeletal muscles. The postganglionic sympathetic fibers in the adrenal medulla release adrenaline and norepinephrine when faced with a perceived threat. These two hormones controlled by the SAM axis medulla are collectively referred to as the catecholamines. They trigger a rise in heart rate and heart contractility, which aid the redistribution of blood and essential nutrients from the visceral organs to the heart, brain and skeletal muscles. The overall effect of these metabolic changes is to increase alertness and physical responsiveness, which has evolved to enable survival in circumstances perceived as inhospitable or life-threatening (Piantadosi, 2003). A healthy ANS response to perceived stressors usually follows this series of metabolic effects with the parasympathetic withdrawal, which is quickly recovered after the cessation of the stressor.

Unfortunately, the increased system activation as a result of stress leads to central and peripheral changes (Charmandari, Tsigos, & Chrousos, 2005). This response facilitates behavioural adaptation and redirects energy to the central nervous system, muscle, and the stressed body sites (Charmandari et al., 2005). Once released into the system, cortisol counters insulin by encouraging hyperglycaemia and stimulating gluconeogenesis, the metabolic pathway that synthesizes glucose from oxaloacetate (Salway, 2013). While the actions of cortisol are primarily metabolic; it also affects ion transport, the immune response, and even memory (Charmandari et al., 2005). The effect of cortisol on the immune system has severe consequences on health, which include, but are not limited to delayed wound healing and tissue repair, impaired responses to vaccination and development and progression of cancer (Godbout & Glaser, 2006; Nella et al., 2014).
The hormone cortisol is considered to be a physiological response to stress that is actively involved in the regulation of blood sugar, blood pressure maintenance, anti-inflammatory function, regeneration of cells in the body and immune function (Salway, 2013). Cortisol production has a circadian rhythm. Circadian rhythms are comprised of a ubiquitous biological oscillation of high levels in the morning and very low levels at night (Chung, Son, & Kim, 2011). While a certain amount of this hormone is essential, especially in the restoration of homeostasis following exposure to stress, prolonged secretion of cortisol could promote cardiovascular morbidity in several ways. High cortisol levels decrease insulin resistance, increase steroid production and blood pressure and lead to increased carotid intima-media thickness (Eller, Netterstram, & Allerup, 2005; Jokinen & Nordstrom, 2009). All these factors are associated with increased risk of abdominal obesity, type-2 diabetes and ischemic heart disease (Farris, 2009; Garcia et al., 2007). These conditions are known risk factors for cardiovascular diseases.

As already stated, cardiovascular disease is the leading cause of death among men in Australia. One would think that established risk factors such as tobacco smoking, being overweight, high blood pressure and physical inactivity are likely to be important causes among Australian men. However, according to some studies, the excess mortality among men is not explained by an increased prevalence of these risk factors, but psychological stress as a result of socio-economic challenges (Birnie et al., 2010; Seeman, Epel, Gruenewald, Karlamangla, & McEwen, 2010). According to Jokinen and Nordstrom (2009), HPA axis hyperactivation is frequent in cardiovascular mortality and mood disorders and is often associated with prolonged high cortisol levels. The candidate mechanisms for this relationship include hypertension and lower heart rate variability (HRV) reflecting altered cardiac autonomic tone.

Analysis of HRV has become an important and a non-invasive procedure for evaluating cardiovascular autonomic influence (Thayer, Yamamoto, & Brosschot, 2010). Stress can elicit profound effects on the heart rate. As already explained in
Chapter 1, sympathetic increases cause the time between heartbeats or R-R intervals to become shorter and relative parasympathetic increases cause the R-R interval to become longer. Sustained SNS arousal may represent one pathway whereby stress produces a sympathetically dominated power spectrum (Thayer, Åhs, Fredrikson, Sollers III, & Wager, 2012). It is intuitively appealing to hypothesize that worry and perceived threat depresses resting HRV, and studies have supported this hypothesis (Agelink, Boz, Ullrich, & Andrich, 2002; Henry, Minassian, Paulus, Geyer, & Perry, 2010; Thayer & Sternberg, 2006). Thus, depressed HRV has been linked to abnormal cardiovascular autonomic modulation and is an important predictor of fatal and non-fatal cardiovascular events (Thayer & Sternberg, 2006). Conversely, high HRV is thought to protect from cardiovascular diseases.

Evidence from clinical studies indicates that social connectedness is associated with improved cardiovascular health outcomes (Gouin, Zhou, & Fitzpatrick, 2014; Kao, Tseng, Lin, & Cheng, 2014; Maunder et al., 2012b). Some research studies have evaluated the acute effects of social support on cardiovascular autonomic modulation. Social integration has been shown to decrease the sympathetic activity of the nervous system of individuals undergoing stressful situation. Hemingway et al., (2005) reported that belonging to a strong social network tilts the sympathovagal balance by increasing vagal activity and lowers metabolic risk factors for coronary disease. Hence, strengths-based community initiatives, which provides social inclusion for men at risk of isolation may be particularly effective in increasing vagal activity and lowering metabolic risk factors for coronary disease. The Australian Male Health Policy adopts this line of thinking and sets out directions to provide supporting environments for men.

2.4.4 Building on Strengths of Australian Men - the Role of Men’s Sheds

From the onset, the policy provides examples of practices that support existing strengths and capacities of males as opposed to focusing on and staying with, the
problem or concern of male deficiency. Specific community-based initiatives for men in Australia are acknowledged in the policy, including the Men’s Sheds, which are aimed at reducing social isolation among men. Men’s Sheds are a grass-root initiative offering a safe place for men, often after retirement, to meet, exchange ideas and often join in some activity and talk. There are over 900 Men’s Sheds across the country with a combined membership of more than 150,000 and growing at around four sheds per week (see the Australian Men’s Shed Association website). The movement has since spread to New Zealand, the United Kingdom and Ireland (Golding, 2011a). The majority of the men join Men’s Sheds on their own volition. Some are referred from a range of community services including community health centres or hospitals and some by friends or family members already attending the Sheds.

Within the shed, a platform for friendships and establishment of meaning social networks is provided. The aim is to address social isolation, which has an impact on health (Ballinger, Talbot, & Verrinder, 2009; Department of Health & Ageing, 2010). Men’s Sheds also provide an important opportunity to raise awareness about health issues and services (Golding, Brown, Foley, & Harvey, 2009). Although medical professionals are not employed by Men’s Sheds, the co-ordinators work closely with a range of service providers and health professionals in the community. This makes Men’s Sheds unique in their approach to men’s health.

Macdonald (2007) reports on a Men’s Shed in Mt Druitt, Western Sydney, which is a drop-in centre for men at risk of suicide. Like some other sheds throughout Australia, the Shed in Mt Druitt is an epitome of a strengths-based approach aimed at building resilience in men at risk of suicide using an intersectoral collaboration approach between a local church, the local Indigenous elders, the local university and other agencies. The aim is to support the local men, some at risk of suicide and other chronic diseases, by offering them, under the supervision of different agencies, a socially inclusive environment. Although different Men’s Sheds operate differently,
the aim is the same, to provide that essential part of preventive health - social support.

Golding and Harvey (2006a) conducted a quantitative study in 24 men’s sheds in five Australian states. Although the study was on the informal learning function of sheds, it provided a carefully researched profile of the range of men who participate, for what sorts of reasons and what they are getting out of it. It was evident that that the need for social support was the main driver for belonging to Men’s Sheds. The men reported that the sheds provided them with a sense of belonging and enjoyment as well as an opportunity to be accepted and give back to their communities.

A study by Misan and Sergeant (2009) found that after involvement, the shed participants reported regaining friendships and a sense of purpose in life; all which are protective factors to health. Even though the study did not explicitly examine the impact of the perceived social support provided by Men’s Sheds on their health, aspects of social inclusion were discussed. For instance, social connections were found to improve men’s health and wellbeing. More empirical research is needed to examine the influence of social inclusion provided by this movement.

Ballinger and colleagues (2009) examined men’s experiences of participating in Men’s Sheds within a rural community in Victoria, Australia. They found men reported common themes of social inclusion that included, increased sense of purpose, feelings of pride and accomplishment and sense of belonging. The authors concluded that the “elements that support Men’s Sheds to be health promoting include being inclusive, providing a male friendly space and recognising the intrinsic health benefits of Men’s Sheds” (2009, p.20). Even though, the researchers did not further explore the impact of this social inclusion explicitly, they did highlight the importance of social connections in protecting the health of the men involved.

As can be seen from these few studies, research into the impact of social inclusion provided by Men’s Shed is still in its infancy. On the whole, the very few studies have
not adequately conceptualised, measured, tested or engaged with the range of variables that may contribute to best practices in Men’s Sheds. Given that social support interventions make people feel valued, decrease stress, increase psychological wellbeing and HRV (Uchino, 2006), it can be hypothesised that belonging to Men’s Sheds might also exert similar adaptations. Improved psychological wellbeing and enhanced autonomic tone secondary to participating in Men’s Sheds would indicate better health status for the men involved. Therefore, the aim of this mixed-methods study was to explore the impact of social inclusion provided by Men’s Sheds on the health and wellbeing of the men involved based on the biopsychosocial model.

2.5 Chapter 2 Summary

In this chapter, I have contextualised the need for a broader approach to men’s health that incorporates non-biomedical practices such as the provision of social inclusion for men at risk of isolation. I have argued that the global domination of the biomedical paradigm in men’s health may result in the overlooking of and therefore the refusal to tackle social determinants of health such as lack of social support, social isolation, social exclusion and psychological stress in the lives of men. For men, these are significant issues, which potentially affect their health and wellbeing. Furthermore, there is a need for further research on Men’s Sheds, to examine the impact of social inclusion provided, which may contribute to best practice in Men’s Sheds. The next Chapter describes the conceptual framework of this study.
Chapter 3: Conceptual Framework and Research Literature on Biopsychosocial Model of Health

Having contextualised the field of men’s health and Men’s Sheds in Chapter Two, I now introduce the biopsychosocial concepts that underpin the conceptual framework of the thesis. I begin the chapter by discussing the concept of holism. Central to this discussion is the collision of two opposing worldviews, represented in the tension between holistic and reductionist approaches to health. I explore this tension predominantly through the lens of the biopsychosocial model of health and focus on the differences between a biomedical/reductionist paradigm and a holistic/strengths-based approach.

To develop this discussion, I introduce the work of medical sociologist Aaron Antonovsky (Antonovsky, 1979, 1987, 1993). I draw on his distinctions between strengths-based and reductionist perspectives, framed through the concepts ‘salutogenesis’ and ‘pathogenesis’. These concepts underpin the philosophical orientation I take up in this thesis and provide a useful framework for explaining the philosophical and ontological underpinnings of Men’s Sheds. Furthermore, I draw on theory of cooperation (Axelrod, 2006; Axelrod & Hamilton, 1981), equilibrium theory (Nash, 1950), hopelessness depression theory, (Abramson, Metalsky, & Alloy, 1989) and psychoneuroimmunology (PNI) and link these theories to social inclusion provided by Men’s Sheds. These links are important for locating my analysis in Chapters 6, 7, 8 and 10 within a biopsychosocial theoretical framework. I include a brief review of some of the significant concepts inherent in various strengths-based initiatives and relate these to the philosophy of Men’s Sheds.

The interdisciplinary discussion presented in this chapter brings together the literature that argues for a holistic approach to men’s health, an approach also advocated by men’s health scholars. I link this literature to the philosophy of Men’s Sheds and put forward my case for an expanded vision of health that includes social
determinants of health and creation of salutogenic environments as a meaningful healing or health maintenance approach in men’s health.

3.1 **Key Concepts of the Study**

### 3.1.1 Holism – Origins, Development and Healthcare

Jan Smuts (1870-1950), a South African statesman and philosopher coined the term holism in 1926 and published it in his best-selling book, ‘Holism and Evolution’. However, the idea seems to have already been in existence prior to that. For instance, as early as 1790, Immanuel Kant (1724-1804), a German philosopher acknowledged organism was a particular entity which required the presupposition of its purposive ‘whole’ in order to understand the organisation of its composing elements.\(^3\) It is beyond the scope of this thesis to delve deep into the historic arguments of holism, as the discussions often appear complex. What is important is that there is consensus in literature that the concept was a part of a development in thinking that led on to challenging Cartesian dualism, which had permeated Western thinking to such an extent that conceptual understandings and consequently the language reflected a split between parts, i.e. between mind and body (Scheper-Hughes & Lock, 1998).

In its popular use, the term holism describes the tendency to understand and interpret phenomena “in terms of the total context which encompasses them” (Seymour-Smith, 1986, p.138). However, within the medical discourse, holism is an elusive term to define because it “has to be understood primarily in terms of what it is not” (Rosenberg, 1998, p.335). In this way, holism is understood in terms of the mechanistic reductionism underpinning biomedicine. It follows from the above that medical holism speaks to an important part of the anti-biomedical project. In other words, it challenges the ontological dualism structuring mainstream biomedicine and

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\(^3\) See sections 65, 66, 78, 80, and 81 of Kant’s Critique of Judgment in Butts (1993)
locates the individual, incorporating body, mind and spirit as the site of holistic healing.

According to Coulter (2004), health care practitioners moved towards holistic modalities of health care after dissatisfaction in biomedical ideas. This is a view shared by Lawrence and Weisz when they point out that the emergence of holism in health care “expresses a protest against reductionism that has accompanied the rise of scientific medicine” (1998, p.335). In contrast to the holistic principles underlying most non-biomedical approaches, the biomedical model is based on a reductionist paradigm (Deacon, 2013; Kleinman, 1997). From this perspective, “human beings are viewed as biological organisms (materialism), to be understood by examining their constituent parts (reductionism) using the principles of anatomy, physiology, biochemistry and physics” (Mehta, 2011, p. 206). Consequently, mind and body are essentially separate entities (Coulter 2004; Kleinman 1997; Scheper-Hughes & Lock 1998).

The theory of mind-body dualism is credited to the philosopher René Descartes (1596–1650), who advanced the metaphysical stance that mind and body are two distinct substances, each with a different essential nature (Macdonald, 2012; Mehta, 2011). Descartes firmly rejected any reliance on external authority as a source of received knowledge. Rather, he believed that knowledge was valid only if based on careful observation informed by studying the simpler parts of the objects (Scheper-Hughes & Lock, 1998). This reductionist approach to the study of natural phenomena became the basis of the Western biological model. However, scholars who draw directly from Merleau-Ponty’s notion of ‘the lived-body’ have critiqued the pervasiveness of the reductionist paradigm. They argue that it “fails to encompass the holistic view of health as a complex condition involving the person, the social group, the environment, spiritual or supernatural forces and morality” (Macintyre, 2003, p.34).

Merleau-Ponty pointed out that the "body is not an object, but multiphasic, experiential beings of finite freedom” (Gold, 1985, p. 664). Summarising the tensions
between holistic and reductionist medical systems, Macintyre (2003) states that the biomedical system fails to acknowledge the patient as an experiential being. Rather, the doctor has the power to determine the truth about a patient and the power to exert control over this knowledge. It is important, however, to note that this power is essentially relational rather than something that is possessed by individual doctors or the medical profession (Foucault, 2000). Regardless, many believe scientific medicine gives the doctor the power to explain health and illness biologically and assumes that psychological and social processes are independent of the disease (Cunningham & Andrews, 1997; Illich, 1977; Montgomery, 2005; White, 2008). The value of the psychological and social processes in health is a central theme in this thesis, and although I do not draw directly on Merleau-Ponty in my analysis, the theorists I employ are significantly influenced by his work.

Holism has become increasingly popular within health care and incorporates biological processes, emotions and the psyche into the study and cure of individuals (Warner, 2014). Such thinking has inspired certain areas of public health, social medicine and epidemiology, which continue to be sheltered in the pockets of holistic thinking despite the dominance of biomedicine (Lawrence & Weisz, 1998). These include the PHC movement and the biopsychosocial model of health. The PHC movement formalised a radical de-emphasising of the hospital-centric biological model in light of the now understood social determinants of health such as social justice, equity, community participation and responsiveness to the needs of local populations (Talbot & Verrinder, 2009). Macdonald (2013) explicitly addressed this issue and advocated for a PHC approach, which is radically different from the top-down, orthodox hospital-centric biological model. Culminating in the Alma Ata declaration of 1978, this movement is explicitly holistic in that it clearly articulated the importance of shifting from disease-centred models of care to balanced system of treatment and disease prevention through affordable, accessible and appropriate services (Macdonald, 2013).

George Engel’s biopsychosocial model is another comprehensive approach based on holism as it upholds that health is best understood in terms of a combination of
biological, psychological, and social factors rather than purely in biological terms (Engel, 1977, 2013; Santrock, Johnson, & Patterson, 2012). This is in contrast to the biomedical model of medicine that explains health and illness in terms of biological processes. Although the novelty and acceptance of the biopsychosocial model varies across health care settings, a strong corpus of research demonstrates its usefulness in understanding health from a holistic view (Da Silva & Solli, 2012; Fava & Sonino, 2007; Green & Johnson, 2013; Lindau, Laumann, Levinson, & Waite, 2003). Indeed, the relationship of mutual influence between psychological variables such as stress and cardiovascular diseases to immunological functioning is clear and unquestionable based on this knowledge (Christian, 2012). Furthermore, this model has helped explain the reported beneficial effects of social support on health (Woods, Priest, & Roush, 2014; Wright, 2011).

Due to psychological stress affecting men, often after retrenchment or retirement, social support predominates among the important psychological variables (Macdonald, 2006; Macdonald, 2011; Smith, 2007; Xanthos et al., 2012). In some groups of men, social stressors such as lack of financial support and social isolation may be especially influential especially after retirement. Old age is one such period when men go through extensive changes. In fact, Kim and Moen (2001) note that the transition from paid work to retirement is one of the most complex life periods for men. It is no wonder that old age is a high-risk period for the onset of biological psychopathology, especially depression (Karpansalo et al., 2005). During this period, men undergo some physiological changes including andropause, erectile dysfunction (ED) and prostate gland enlargement (Al-Sejari, 2013; Ferrando et al., 2002). The changes impact on the men's lives and their relationships with their families.

In addition to physiological changes, older men undergo a number of environmental changes. For example, many must grapple with unemployment, retirement, deaths of loved ones, and changes within the family structure, which can cause changes in social roles (Grundy, 2006). It has been observed that paid work activities are an important source of men’s friendships (Scott & Wenger 1995). Therefore, retirement and the loss of paid work are life events that place a potential strain on
the social lives of men leading to poor health outcomes. In order to provide themselves with viable social networks, men join Men’s Sheds to deal with the rupture of social support (Ballinger et al., 2009) and to escape social isolation (Department of Health & Ageing, 2010). Because of this, the interactions between cognitive-affective processes and bodily processes and between the individual man and the environment presents favourable characteristics for studying the health impacts of social inclusion provided by Men’s Sheds from a biopsychosocial approach.

Locating social inclusion provided by Men’s Sheds as a potential salutogenic rather than a curative process loosens the hold of the dominant view of men’s health within biomedical remedies. More so, considering social inclusion from a strengths-based perspective dissipates a deficit view of health, paving the way for a more holistic understanding, explanation, and interpretation of Men’s Sheds. This understanding disrupts and challenges the entrenched reductionist epistemology of biomedicine and in doing so creates space for different knowledge and theories of health maintenance/preservation. Antonovsky’s (1979; 1987) notion of salutogenesis offers an example of a paradigmatic shift away from a reductionist approach.

3.1.2 Salutogenesis

Salutogenesis is centred on the discovery and use of resources, inside a person to maintain a healthy status (Antonovsky, 1987). As a framework, it provides a paradigmatic shift that challenges the disease orientation of the biomedical model. As such, the salutogenic concept provides a succinct and comprehensible theoretical model differentiating the core tenets of biomedicine and most health protection approaches that are underpinned by the Ottawa Charter for health promotion. In this section, I contextualise and discuss Antonovsky’s work to the Ottawa Charter and relate the salutogenic concepts to the Men’s Sheds. I draw on the work of Lindstrom (Lindstrom & Eriksson, 2005, 2006) and Macdonald (2005), to
demonstrate how the salutogenic framework could support the philosophical and practical intentions of Men’s Sheds.

A decade before the development and constitution of the Ottawa Charter for Health Promotion, Antonovsky (1979) developed the concept of salutogenesis. This model represents Antonovsky’s growing disenchantment with the biomedical model. He turned the traditional question of the aetiology of disease upside down; arguing that germ theory alone was not sufficient to explain the causes of disease. He believed that other factors were involved. This understanding is fundamental to his theorising that “medicine can never come close to closing the gap between demands and resistance resources by concentrating on specific diseases” (Antonovsky 1972, p.541). Using the river as a metaphor for health development, he highlighted the shortcomings of biomedicine’s pathogenic orientation likening it to:

...a well-organised, heroic, and technologically sophisticated effort to pull drowning people out of a raging river. Devotedly engaged in this task, often quite well rewarded, the establishment members never raise their eyes or minds to inquire upstream, around the bend in the river, about who or what is pushing all these people in.

Antonovsky (1987, p.89)

The logic of the river as a metaphor for health development was used by Antonovsky to demonstrate that health is on a continuum in which the aim is to “see the entire person rather than the disease” (Antonovsky 1996, p.18). In other words, health is not simply the opposite of disease, but both exist on a continuum of what he called health-ease/dis-ease. This view of health-ease/dis-ease continuum stands against the traditional biomedical model dichotomic definition of both as two absolute conditions. In this thesis I argue this understanding fits well with the philosophy of Men’s Sheds, where the aim of the program is to provide supportive environments to strengthen the human being’s (body and spirit) innate healing capacity, rather than to target any specific biological or pathogen.

The metaphor of logic of river predates Antonovsky as it had been used by others, see, for example “A case for refocusing upstream: the political economy of illness by (McKinlay, 1975).
The significance of this conceptualisation of health is that it allows a fluid movement between ‘ease’ and ‘dis-ease’, understanding that this movement is influenced by broader biopsychosocial factors. In this framework, pathogens are understood as natural parts of life. The main issue, however, argues Antonovsky (1987), is to explore how people survive, to focus on what causes health, instead of focusing on pathologies that make people sick. The intention is to strengthen a person’s capacity for salutogenesis or factors that “underlies the movement toward health” (Antonovsky 1998, p.6). It is here that Antonovsky’s salutogenic model of health is credited with influencing the development of health promotion and ultimately the principles of the Ottawa Charter although the later focus on settings rather than within an individual (see, for example, Eriksson & Lindstrom 2005).

At the heart of the Ottawa Charter, ‘health’ is seen as a process enabling people to develop health through their assets and thus having the opportunity to lead a good life (WHO, 1986; Eriksson & Lindstrom 2005). Similarly, the salutogenic model focuses on resources for health and health-promoting processes, which enable individuals to cope in circumstances where others would not. Similarly, Men’s Sheds is based on the understanding that the health maintenance will occur if men are provided with a supportive environment, where they experience being valued by others (Ballinger et al. 2009). I was instantly drawn to Antonovsky’s salutogenic paradigm, as its alignment with the principles of the Ottawa Charter seems to me to be a remarkable congruence. This discovery was particularly exciting as the social inclusion provided by Men’s Sheds has not been widely theorised within the academy, and hence, there is a dearth of a specific theory to draw from.

The salutogenic model has two elements, one relating to the “Sense of Coherence” (SOC) - the potential feeling of confidence over one’s internal and external environments and Generalised Resistance Resources (GRRs) - a phenomenon that is effective in combating a wide variety of stressors (Antonovsky 1987).
GRRs are personal, social or environmental factors that facilitate coping and provides the experiences needed to increase an individual’s SOC (Antonovsky, 1996). He describes GRRs as the “property of a person, a collective or a situation which, as evidence or logic has indicated, facilitated successful coping with the inherent stressors of human existence” (Antonovsky, 1996, p.15). Examples are resources such as social support, good employment, safe environment, which can be both intrapersonal and embedded in the social and physical environment. Such resources can help a person cope and are effective in avoiding or combating a range of psychosocial stressors (Antonovsky, 1987). When these resources become stable, they build up the SOC (Antonovsky, 1996). In this thesis, I argue that social inclusion provided by Men’s Sheds is important GRR providing sets of meaningful, coherent life prerequisites that facilitate effective coping for the men involved.

Fundamental to the SOC are three core factors: comprehensibility, manageability and meaningfulness, which increase the individual’s chances of coping with difficult life challenges and move towards health (Antonovsky, 1987). According to Antonovsky in order for people to maintain health, they require comprehensibility - an understanding of what is happening to them and around them, manageability - the ability to manage the situation either by themselves or by drawing on external resources such as others in their community, and meaningfulness, which is the ability to find meaning in the situation. Both Erikson and Lindstrom (2005) and Macdonald (2005) concur that when a person believes the world is comprehensible, manageable, and meaningful they have a stronger SOC and are more likely to maintain their health.

To date, several studies in public health and health promotion have analysed the SOC using the Orientation to Life Questionnaire measurement scale (Lindstrom & Eriksson 2006; Suominen & Lindstrom 2008; Wikman, Marklund & Alexanderson 2005). More so, others have taken up, as I do, a salutogenic orientation to frame their research projects from a health-creating perspective (Forssén & Carlstedt, 2006; Mayer & Boness 2011; Wilson, 2013). These studies aim to explore positive rather than negative aspects of health and take up the philosophical aspects of SOC rather
than applying it as a measurement scale. Although I do not use the SOC scale in this research, I draw on the concept to analyse the dynamic health creating interaction between individuals and their environments (Macdonald, 2005). It is this dynamic interaction between men and the social inclusion provided by Men’s Sheds that this thesis focuses on.

In sum, the salutogenic framework offers a paradigmatic shift from the biomedical orientation of pathogenesis and risk factors. It focuses on strengths and determinants for health that includes the interaction of the social, psychological and biological factors. The salutogenic model has a close philosophical resonance with many non-biomedical systems, in particular, strengths-based PHC initiatives that use the Ottawa Charter principles. Importantly, salutogenic health research is more likely to address the broader social determinants of men’s health, whereas pathogenically informed research focuses primarily on disease causation.

The application of salutogenic approaches within the field of men’s health is not new. Macdonald (2005) has advocated its adoption in men’s health research, policy and practice domains. This effort has been acknowledged in Australia with the development of the National Male Health Policy-Building on the strengths of Australian males, which has a distinct salutogenic focus (Department of Health and Ageing, 2010). By focusing on health-creating factors that draw on the individual’s resilience and strengths, this model is potentially empowering as it draws on the individual’s healing resources and agency. Therefore, I draw on the concept of salutogenesis to understand the impact of social inclusion provided by Men’s Sheds on the health of the men involved. To further achieve a wider understanding of the effects on the health of social inclusion provided by Men’s Sheds, the theories and research about the correlation between biological and psychosocial variables are summarised in the next section.
### 3.2 Participating in Men’s Sheds: A Cooperative Strategy for Social Support Provision

This section expands on the concept of holism, establishing a frame by which to further achieve a biopsychosocial understanding of Men’s Sheds. First, the theory and approaches in social support and specific to social inclusion are described. Second, theories and research about the correlation between biological and psychosocial variables are summarised and analysed including theorisations about cooperative strategies and psychoneuroimmunological processes. Although the description of the immunological process is outside of the scope of this thesis, further description and specific evidence concerning social inclusion provided by Men’s Sheds and its relation to the health and wellbeing of the men involved might be part of post-doctoral follow-up research. With this in mind, a preliminary theorisation about an epistemological base for cooperative strategies related to social support is presented. Psychological distress and coping strategies have been widely documented in research focused on psychoneuroimmunology (PNI) (Hou & Baldwin, 2012; Hoyt et al., 2014; Jaremka, Lindgren, & Kiecolt-Glaser, 2013); therefore, they are briefly described here, and this description focuses on their relation to social inclusion, as social inclusion is the key variable for this study.

#### 3.2.1 Social Inclusion: theoretical base

As already outlined, research published in leading Australian journals has shown that Men’s Sheds provide social inclusion for the men involved. Social inclusion is a fundamental determinant of health that is integrally linked to the Ottawa Charter for Health Promotion, particularly through the action areas of creating supportive environments and strengthening community action (WHO, 1986). It follows that strategies for social inclusion are concerned with promoting social connectedness, social trust, and value recognition (Cacioppo, Reis, & Zautra, 2011; Freiler & Zarnke, 2002; Jermyn, 2001). In other words, the availability of appropriate social support is critical for social inclusion. Therefore, in this thesis, I focus on the use of social support as a means to understand inclusion processes in men. Although social
support use reflects only a part of the way in which social inclusion occurs, it is particularly critical since it is a key way in which access to resources or services is enhanced or limited (Reimer, 2004). It is also a valuable focus because of the wide range of ways in which support might occur.

Friendships in the sheds are a common source of social support for the men involved. As friends begin to play an increasingly central role in each other’s lives, these relationships may also begin to play an important role in the health of the men involved. Therefore, it is essential to conceptualise social support in order to understand the impact it might have on the health and wellbeing of the men involved in Men’s Sheds. Conceptualising social support is also helpful because the concept has been defined and theorised in different ways, which often complicates its measurement (Gottlieb & Bergen, 2010).

Ogden (2012) has defined social support based on the number of friends an individual has and his or her satisfaction with the support rendered. In this theorisation, social support includes esteem support, whereby a person’s self-esteem is boosted by other people, informational support, which includes information provided by other people and social companionship, which consists of support rendered by means of activities and instrumental support that involves some form of physical assistance. DiMatteo and Martin (2002) define social support as any input that can further the goals of the receiver. In this case, social support is described as tangible - it includes the provision of physical resources that can be beneficial to the individual in some way, or psychological that assists the individual in developing emotional wellbeing.

Social support has also been used to describe resources, either people or community to which an individual turns for emotional and instrumental assistance (Wills & Ainette, 2012). There are others who describe social support as the active participation of significant others in the caregiver’s efforts to manage stress (Chambers, Ryan, & Connor, 2001; Chappell & Funk, 2011; Taylor, 2011). This thesis adopts Hupcey (1998) categorisation of social support into five categories. These are
social networks, type of support, perceived support, the intention of support and reciprocity of support.

Category 1: Within the social networks category, social support is conceptualised by its accessibility through social links such as groups or communities.

Category 2: Type of support category draws from Cohen (1985) and Cobb (1976) work, which recognises the resources provided by one person to another and the information a person receives that forms their idea or belief that they are being appreciated and cared for. According to Cobb, this information allows a person to locate himself or herself as a member of the network.

Category 3: Perceived support draws on Procidano and Heller (1983)’s work, which recognises social support as the level of satisfaction that a person has as related to their need for support, information and reciprocity.

Category 4: The intention of the provider of support draws on Shumaker and Brownell (1984)’s definition of social support. They defined social support as an exchange of resources, with the idea that the given resources will improve the recipient’s wellbeing.

Category 5: The reciprocity category advanced by Antonucci (1985) states that the function of social support is the exchange between the provider and a receiver. Although old, these categories provide the base for modern definitions of the construct of social support, which is focused more on the receiver’s perception of the offered support. More recently, social support has been understood as the perception that one is cared for and loved, esteemed and valued, and belongs to a network of supportive friends (Wills & Ainette, 2012). Bogossian (2007) also acknowledges social support as the perception of the receiver that their basic social and emotional needs are gratified when interacting with others. In this way, social support is an interaction in a ‘providing-receiving’ dynamic, and its effectiveness is dependent on the recipient’s perception. It is through this perception that one is
cared for and loved, esteemed and valued, and belongs to a social network that social support has its strongest associations with health outcomes and psychological wellbeing (Cohen, 1985; Thoits, 2011; Turner & Turner, 2013).

**3.2.2 Cooperative Strategies and Psychoneuroimmunology**

Living organisms possess a wide range of systems that maintain function, restrict damage or depress metabolism under extreme conditions (such as upregulation of HPA axis activity in response to stress described in Chapter 2). Understanding how and why each part of an organism has been modified to survive, reproduce and be functional in its specific environment lies at the very heart of evolutionary physiology (Chown et al., 2010; Feder, Bennett, & Huey, 2000). Thus, evolutionary physiology provides organisms with the necessary flexibility to adapt to their environment. Darwin’s theory of natural selection describes both the process and the purpose of adaptation. Natural selection theory explains how traits considered useful will always be preserved by nature (Darwin, 1991). It is important to highlight from the onset that the detailed description of the evolutionary process is beyond the scope of this thesis, but only used here to lay the foundation for preliminary theorisation about an epistemological base for cooperative strategies related to social support provision.

Natural selection acts on both the observable characteristics of an organism, also called the phenotype and on the heritable basis of any phenotype to give a reproductive advantage that may become more common in the population. On the heritable level, Darwin’s concept is very straightforward: if a new inheritable trait is useful, it will be preserved by nature. Here ‘useful’ refers to advantages in either survival or reproduction. Individuals who live in groups have success compared to lonely individuals when competing for the same resources. Such individuals also have success in surviving to the reproductive age, attracting mates, having a better ability to reproduce more offspring (Kuijper, Pen, & Weissing, 2012). Also, they are also more likely to preserve their traits in the population and have offspring that share the same traits (Cornwallis & Uller, 2010). These inheritable traits can also
Axelrod (1981; 2006) acknowledges that individuals can behave cooperatively for a higher prize. In his theory of cooperation, he described ‘Tit For Tat’ (TFT) as the most successful strategy in-group cooperation when compared with a self-benefit dilemma. The very notion of the theory of cooperation is that linked group members repeatedly interact with each other with the outcome of the cooperation being better for the group. Similarly, Nash’s equilibrium theory (1950) maintains that even when a group uses non-cooperative work, knowingly or unknowingly, an equilibrium point will always exist where group benefit will persist. This he argues is due to individuals accumulating experience and, as a result, becoming cooperative.

It is for this reason that our ancestors utilised cooperative strategies to face their unpredictable environment. To be successful hunters and gatherers and protect themselves from the wild savannah to the tropics, from the scorching desert to the frozen tundra, they learned how to organise collectively, to cooperate, and to learn from one another in a manner that produced cumulative improvements and considerable diversity amongst human populations (Boyd, Richerson, & Henrich, 2011; Smaldino, Schank, & McElreath, 2013). In other words, being socially included in cooperatives was the strategy that allowed our ancestors to pass on that very lifestyle as a positive trait. Boyd (2002) and Smaldino (2013) acknowledge that group selection, as well as patterns of in-group cooperation and out-group hostility, gave rise to some kinds of cognitive capacities, emotional answers and sheltering feelings for our ancestors. Consequently, this interaction may have provided the basis for resilience, identity and cooperative groups present in our society.

In this thesis, the strategy of participating cooperatively in Men’s Sheds is proposed in direct lineage with modern social support in a process involving social evolution and natural physiological selection. As for stress responses, it is proposed that the strategy of participating cooperatively in Men’s Sheds could mean physiological changes for the members of the group, who would have conferred the genetic
predisposition to be involved in a cooperative group in order to provide a supportive social environment. This is interpreted as a strategy rooted in the evolutionary process: individuals who chose to participate cooperatively in group-membership had higher possibilities of survival (Kingma, Santema, Taborsky, & Komdeur, 2014; Nowak, 2006). The inheritance of this strategy is proposed as the foundation for participating in Men’s Sheds with psycho-biosocial effects. This hypothesis visualises the biological and psychological impacts of Men’s Sheds from an evolutionary perspective; which is linked to the concept of PNI.

Robert Ader (1932-2011) was an American psychologist who coined the term "psychoneuroimmunology", a field that is dedicated to addressing how psychological factors, particularly psychological stress influence the immune system and physical health through neural and endocrine pathways. Ader (1980) challenged the continued use of reductionistic strategies that underlay most contemporaneous immunologic research and argued “immune processes are homeostatic processes and, as such, can be completely understood only within the context of an integrated system of adaptive mechanisms ultimately regulated by the central nervous system” (1980, p.309).

Indeed, studies have demonstrated the relationship between psychological variables and the neuro-immune-endocrine network thereby demonstrating a biopsychosocial approach to an understanding of homeostatic processes. For instance, the influence of social support on cortisol and catecholamine levels (Hamer, Tanaka, Okamura, Tsuda, & Steptoe, 2007; Hughes, Watkins, Blumenthal, Kuhn, & Sherwood, 2004; Hughes et al., 2014); Hughes, on the immune system and wound healing (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002) and regulation of cardiovascular activity and heart rate (Ratnasingam & Bishop, 2007), has been demonstrated. All these studies have a holistic perspective, adopting PNI as a platform for systemically studying health and for acquiring a more sophisticated understanding of the complex interactions between an organism and its environment (Ader et al., 1995; Irwin, 2012).
The environment can strongly affect individuals’ behaviour and the range of possible responses to stressors. Abramson (1989) hopelessness depression theory states that a subject facing adverse results may keep trying to overcome; however, this insistence can cause higher anxiety thereby affecting any adaptation abilities. As men reach a certain stage in their life, many must grapple with unemployment, retirement, deaths of loved ones, and changes within the family structure, which can cause changes in social roles and affect individuals’ response to stress. According to Abramson (1989), facing a constant period of frustration may generate feelings of loss of control, which may cause depression.

Based on holistic perspectives, such as the salutogenic theory (Antonovsky, 1979), theory of cooperation (Axelrod, 1981), equilibrium theory (Nash, 1950), psychoneuroimmunology (PNI) approach and, hopelessness depression theory, (Abramson, 1989), this research investigates the biopsychosocial impact of social inclusion provided by Men’s Sheds. Given the clear psychosocial impact of social inclusion provided by Men’s Sheds on the men involved, it is understandable that researchers would choose to focus on how they affect the health and wellbeing of the men involved. However, the biopsychosocial model would suggest that biosocial and biomedical factors also play a significant role either directly or indirectly through meditational or moderational processes. Within the biopsychosocial model, all factors can be either important consequences of health status or contributing factors (Hoffman & Driscoll, 2000). Thus, the following section will review some of the strongly supported psychosocial and biological contributors to social inclusion interventions and discuss their potential applicability to Men’s Sheds.

3.3 Key Biopsychosocial Factors in this Study

3.3.1 Psychological Stress

Stress is an inherently psychological phenomenon and is a significant predictor of cardiovascular diseases (see, for example, Chrousos, 2009; Steptoe & Kivimäki, 2012). While many psychological factors may contribute to male mortality, the impact of
emotions (limbic system) on different physiological parameters (Central nervous, Autonomic nervous and Immune systems) should not be underestimated (Eggers, 2007). Furthermore, it can be assumed that some men involved in Men’s Sheds will suffer intense anxiety and depression, respectively. These strong negative emotions can cause a state of psychological distress, which induces the hyper-reactivity of the cardiac system as discussed in Chapter 2.

Although there is no research that has yet established that Men’s Sheds can reduce the stress levels of the men involved, stress is a strong variable to explore. Overall, there seems to be strong evidence that psychological stress, either due to social isolation or exclusion is a risk factor for poor men’s health. However, given the evidence for a strong relationship of stress with that of cardiovascular and suicide mortality in general, the evidence suggesting biological changes related to social inclusion provided by Men’s Sheds and its potential to terminate HPA activation and harmful effects of prolonged exposure to glucocorticoids are important areas to explore. This variable is taken up in detail in Chapters 5, 6, 7 and 8.

3.3.2 Social Support

Although the resources for health and wellbeing are many, Macdonald (2005) acknowledges social support is one of the most powerful psychosocial resources of positive health determinants. The social support that men can gain from connecting with their friends in the sheds should not be underestimated. As already mentioned, social support protects individuals from the deleterious physiological consequences of stress through the neuro-endocrine and psycho-immunologic pathways (Bogossian, 2007; Uchino, 2006b). Therefore, given the importance of social support to general health, social support is an important variable to examine in Men’s Sheds. This variable is taken up in detail in Chapters 5 and 6.
3.3.3 Cortisol and Heart Rate Variability

Given the changes to cortisol levels, a hormone related to stress, that occur during exposure to acute/chronic stress (Benfield et al., 2014; Chung et al., 2011; Eisenberger, Taylor, Gable, Hilmert, & Lieberman, 2007; Hamer & Steptoe, 2012; Hellhammer, Wüst, & Kudielka, 2009; Salway, 2013), it seems that men involved in the sheds might also show low levels of this hormone. As well, in research analysing heart rate variability (HRV), social support counteracts the stress response and buffer cardiovascular activation in depressive individuals (Cosley, McCoy, Saslow, & Epel, 2010; Hopp et al., 2013; Maunder et al., 2012a). In these studies, social support was found to increase resting HRV, indicating reduced sympathetic nervous system (SNS) and increased vagal activity. Cortisol and resting HRV are two important variables for this study and are considered in Chapter 8, 9 and 10. Lastly, changes in blood pressure have been reported in stressed individuals (Rozanski, Blumenthal, Davidson, Saab, & Kubzansky, 2005). This variable is taken up in detail in Chapters 8 and 9.

3.4 Conclusion: Making the Case for Men’s Sheds as Strengthening Men’s Innate Healing Capacity

Demonstrated in this and the previous chapter, the growing interest in holistic approaches within the health discourse reflects the need to address men’s health issues from a significantly broader perspective that takes into account the social, psychological and biological factors (Macdonald, 2005, 2006; 2011; Smith, 2007; Xanthos et al., 2012). The aim, as Macdonald (2005) points out, is to promote an expanded vision of men's health, which adopts a social, systemic view of health, including the biological but encompassing consideration of the social determinants of health. This is not to dismiss physical processes, such as the pathology, the biochemistry and the physiology of a disease, but a reminder to take into account the role of social factors or individual subjectivity in planning for men’s health programs and services.
As noted in the literature, there are serious social, cultural and political factors impacting on the life of men that lie beyond their control. Biomedical approaches, which advocate “more visits to the doctor and more exercise and less alcohol, on their own will not guarantee better health” (Macdonald, 2005, p.105). The inclusion of the social determinants of health perspective would mean the acknowledgement of PHC approaches that focus on creating environments that are genuinely concerned with fostering men’s health (Macdonald, 2005). For some men their sense of health and wellbeing is often improved when they have access to friendly environments that serve as important meeting places for them to socialise, share life experiences and skills and support each other (Ballinger et al., 2009; Misan & Sergeant, 2009).

It follows from the above that a strong corpus of research advocates for strengths-based approaches to men’s health (Bulman & Hayes, 2011; Macdonald, 2005, 2006; Macdonald, 2011; Morgan et al., 2007). For example, there is expansive commentary, albeit lacking an empirical base, which suggests that Men’s Sheds are supportive environments, which offer an important vehicle for maintaining the health of the men who attend them. There is sufficient evidence, however, to show that Men’s Sheds provide that essential part of preventive health - social support for the men who attend them (see, for example, Ballinger et al., 2009; Foley, Golding, & Brown, 2008; Ford, Scholz, & Lu, 2014; Golding, 2006; Misan & Sergeant, 2009; Morgan et al., 2007; Moylan, Carey, Blackburn, Hayes, & Robinson, 2013; Wilson & Cordier, 2013). The role of social support not just in preventing illness but also in fostering health has been well documented. For instance, a recent meta-analysis of large prospective studies showed a robust relationship in which social and emotional support from others can be protective for health (Holt-Lunstad, Smith, & Layton, 2010).

Due to strains placed by serious social, cultural and political factors on the life of men, most of which lie beyond their control, social support predominates among other salutogenic concepts of personal and environmental resources (Macdonald, 2005). As such the term “creation of salutogenic environments” has been used to reflect approaches such as Men’s Sheds, which promote positive health (Macdonald,
2005). Although it has yet to be shown through research whether social inclusion provided by Men’s Sheds could demonstrate measurable benefits in a more convincing way, its focus on positive health would seem to suggest it could be salutogenic. Therefore, salutogenesis provides a worthwhile theoretical framework for research activity focused on Men’s Sheds. This development is in response to the extensive documentation that demonstrates how, in isolation, the biomedical model is problematically limited. It lacks the scope to address the complexity of the social factors that fosters or damages men’s health. The focus of the next chapter is to outline the research methodology, design, and methods I applied in this study.
Chapter 4- Research Methodology and Research Design

4.1 Introduction

Chapter 3 covered the theoretical framework and outlined the biopsychosocial variables that are explored in this study. This chapter discusses in detail the methodological choice and the research design process of this study based on the aim of the research and research questions. Specifically, it outlines the research questions, explains why mixed methods research was considered appropriate for this thesis and the strengths this strategy.

I conducted a mixed methods research study to examine the impact of Men’s Sheds on the health of the men involved. Adopting a mixed methods research as a methodological approach is a growing phenomenon in many fields of social science (Bryman, 2012, p.10). In health sciences research (e.g. public health, nursing, medicine, population health or medical anthropology) where positivism has long dominated, there is an increasing call for using mixed methods to explore the same phenomenon because of the complexities involved (see, for example, Andrew & Halcomb, 2009; Broom & Willis, 2007; Everest, 2014). Inspired by this methodological development and motivated by the observed gaps in the literature describing the biopsychosocial impacts of Men’s Sheds, this thesis adopts mixed methods research as its methodology to enhance the validity of the overall research.

Combining qualitative and quantitative approaches was facilitated by my ontological and epistemological position, which may be outlined as broadly pragmatist. Pragmatism “provides a strategy to integrate principles from each of a critical, interpretive, and scientific/positivist paradigm to more optimally inform practice” (Shaw, Connelly, & Zecevic, 2010, p.512). Such a methodological choice was also influenced by the research questions, research purposes, and some practical considerations such as time constraints and the cost of the overall project. Thus, a convergent parallel design, where the researcher collects and analyses qualitative
and quantitative data followed by a merging of the two sets of data in an overall interpretation was implemented in this thesis. It should be pointed out that although the combination of qualitative and quantitative data has the potential to gain complementary strengths and non-overlapping weaknesses (Johnson & Onwuegbuzie, 2004), the quantitative study is small and has inherent limitations in its research design.

The rest of this chapter is structured as follows. Section 4.2 outlines the research questions. Section 4.3 introduces pragmatism as a philosophical tradition in mixed methods research. Section 4.4 illustrates the characteristics of mixed methods research as a distinct methodology, and then explains the rationale for adopting a mixed methods research in this thesis. Section 4.5 addresses the two specific research methods used in this study; the overall research design of this study, including the implementation decision, the weighting decision, and mixing decision is then discussed in detail in section 4.6. Finally, Section 4.7 concludes this chapter.

4.2 Research Questions, Aims and Objectives

4.2.1 Research Questions

An important initial step in any research is the construction of clear research questions (Yin, 2014). Both qualitative and quantitative questions were asked to investigate different aspects of the impact of Men’s Sheds on the health of the men involved. The qualitative strand investigated the lived experiences of participating in Men’s Sheds and how those experiences impacted on the health of the men involved. Research question 1 (RQ 1) investigated the effect of the social inclusion provided by Men’s Sheds. Research question two (RQ 2) further investigated how the men involved in Men’s Sheds constructed the meanings of the social inclusion provided and how those meanings impacted on their health and wellbeing. Research question three (RQ 3) looked at understanding the effect of Men’s Sheds on coping with stressful situations.
The quantitative strand evaluated the effect of Men’s Sheds on cardiac autonomic function, cortisol level and additional health-related outcome measures in men involved. Research question four (RQ 4) looked at what effect participating in Men’s Sheds had on resting heart rate variability (HRV) in men involved. Research question five (RQ 5) looked at how participating in Men’s Sheds impacts the HPA axis activation. Research question six (RQ 6) investigated if there was any correlation between on cardiac autonomic function, the HPA axis activation and additional health-related outcome measures as a result of participating in Men’s Sheds. Finally, research questions seven (RQ 7) and eight (RQ 8) addressed the overall effect of Men’s Sheds on the health and wellbeing of the men involved and were answered by combining the evidence from the qualitative and quantitative strands into a metanarrative.

The following are research questions for each category in this thesis.

4.2.2 Qualitative Research Questions

RQ 1. How do the men involved in Men’s Sheds construct the meanings of the social inclusion provided?
RQ 2. In what ways do the meanings of social inclusion provided by Men’s Sheds impact on the health and wellbeing of the men involved?
RQ 3. How do men involved in Men’s Sheds describe their experiences of day-to-day life?
RQ 4. What is the impact of Men’s Sheds on the health of the men involved?

4.2.3 Quantitative Research Questions

RQ 5. Does participating in Men’s Sheds have any effects on the resting HRV of the men involved?
RQ 6. Does social inclusion provided by Men’s Sheds act in a stress-buffering capacity?
RQ 7. Is there any difference in cortisol levels in the study group before and after participating in Men’s Sheds?
RQ 8. Is there any correlation between resting HRV, cortisol levels, resting hemodynamic measures and psychosocial health measures in individuals involved in Men’s Sheds?

4.2.4 Mixed Methods Research Questions

RQ 9. To what extent do the quantitative results on cardiac autonomic function, cortisol level, resting hemodynamic measures and psychological health status intersect with the perceptions of social inclusion shared by the men involved in Men’s Sheds?

Each question was crafted to guide this study in determining the impact of Men’s Sheds on the health of the men involved. Different dimensions of each question were investigated through the qualitative and quantitative strands of this study.

4.3 Philosophical Assumptions and Methodology

In this section, I will discuss my philosophical assumptions and methodology, based on a mixed methods design. The methodology involved a parallel mixed methods design, collecting and analysing both qualitative and quantitative data simultaneously over the timeframe of the intervention (Creswell & Plano Clark, 2011). The choice of research methodology is determined by the researcher’s philosophical assumptions (Creswell, 2013; Denzin & Lincoln, 2011). Therefore, to conduct or evaluate any research, it is significant to know the researcher’s underlying philosophical assumptions. Below, I outline my philosophical assumptions about ontology and epistemology and demonstrate how these dimensions influenced my methodological choice.

4.3.1 Ontology and Epistemology

Ontology is concerned with the views that researchers hold about the nature of reality. Specifically, ontology is defined as “the ideas about the existence of and
relationship between people, society and the world in general” (Eriksson & Kovalainen, 2008, p.13). The central point here is the question of whether the reality is subjective or objective. The former position relates to subjectivism or constructionism and the latter to objectivism. Subjectivism and objectivism have been described as a continuum’s polar opposites with varying philosophical positions aligned between them (Eriksson & Kovalainen, 2008).

A subjectivists or constructivists view on ontology asserts that “reality is masked by those human processes which judge and interpret the phenomenon in consciousness prior to a full understanding of the structure of meaning it expresses” (Morgan & Smircich, 1980, p.494). In other words, there are multiple realities, which can be explored, and constructed through human interactions and meaningful actions. On the contrary, an objectivist view on ontology is developed from the natural sciences - it asserts that social reality is objective and is subject to observation and experiment (Henning, Van Rensburg, & Smit, 2004).

Epistemology is concerned with how knowledge can be produced and argued for, including the criteria by which knowledge can be accepted as being valid (Gray, 2013). There are two distinct epistemological positions - positivist epistemology and interpretive (phenomenological) epistemology (Bryman, 2012; Gray, 2013). A researcher with an objectivist view on ontology would encourage an epistemological consideration of positivism. Positivism emphasizes the adoption of scientific methods and systematization of the knowledge generation process with the help of quantification to uncover the truth (Henning, Van Rensburg & Smit, 2004). Positivists believe that the researchers cannot have knowledge of anything, except by generating “hypotheses that can be tested and that will thereby allow explanations of laws to be assessed” (Bryman, 2012, p. 11). More significantly, this position presumes that different viewers or researchers can make exactly the same observations concerning a phenomenon.

On the other hand, a researcher with a subjectivists or constructivists view on ontology will be in favour of an interpretive epistemology. Interpretive epistemology
emphasizes that events are understood through the mental processes of interpretation, which is influenced by the interaction of human beings with their social contexts (Gray, 2013). Unlike positivism, interpretivism supports the view that those active in the research process socially construct knowledge by experiencing real life or natural settings. Therefore, social scientists and the research participants are interlocked in an interactive process of talking and listening, reading and writing (Creswell, 2013). More significantly, this position holds that the researcher or observer inevitably sees the phenomenon observed in a way conditioned by her/his own experience and knowledge and the sense of “objectivity” is, therefore, different from the positivist approach.

In this thesis, I adopted a middle position in my ontological assumption and a middle-range viewpoint on the epistemological stance. I view knowledge as a construction based on the reality of the world where human beings experience and live (Johnson & Onwuegbuzie, 2004). In order to understand the biopsychosocial impacts of Men’s Sheds, I also believe that knowledge can be gained by understanding the role human beings play in the social reality (Gray, 2013), rather than separating the knower and the known. I also recognise that it is important to study the nature of relationships among biological, psychological and social factors, all which play a significant role in human functioning in the context of the health of the men involved in Men’s Sheds. Pragmatism offered an epistemological justification for adopting this position. Pragmatism is a “deconstructive paradigm that advocates the use of ‘what works’ as the truth regarding the research questions under investigation” (Tashakkori & Teddlie, 2003, p.713). In other words, pragmatism rejects a position between interpretivism and positivism.

4.3.2 Pragmatism as a Research Paradigm

I became sensitised to pragmatism through discussion with colleagues and my background in nursing. Essentially, nursing practice consists of different assessment techniques to obtain patient information. These range from subjective history taking, patient surveys, as well as measuring, and correlating “biochemical and biological
markers with clinical variables” (Larson et al., 2006, p.472). In this regard, the nursing profession aligns theoretically with pragmatism in that it depends on both narrative and numerical methods in providing practical answers to problems.

Pragmatism as a philosophical movement began in the United States by Academic Sceptics such as Charles Sanders Pierce (1839-1914), William James (1842-1910) and John Dewey (1859-1952). The word pragmatism comes “from the Greek word, ‘πράγμα’, which means action from which the English words ‘practice’ and ‘practical’ were derived” (James, 2008, p.20). In contemporary philosophy, Pierce is appreciated largely for his founding of pragmatism (Scheffler, 2013). From the onset, Pierce rejected scientific determinism and defended a “pragmatic” notion of clear concepts. In other words, he defended, in a manner consistent with not accepting naive realism, the superiority of the scientific method over other methods of inquiry (Burch, 2014).

James expanded and popularised the pragmatic thought in his publication called *Pragmatism: A New Name for Some Old Ways of Thinking*. He described pragmatism as concerned with practical solutions to contemporary problems experienced by people and society (James, 2004). For James, pragmatism was not a program for “power-bringing words” or “solving names”, such as “‘God’, ‘Matter’, ‘Reason’, ‘the Absolute’, ‘Energy’” (James, 2004, p.51). Rather, pragmatism allows bringing out of each ‘solving name’ its “practical cash-value” and sets it at work within the stream of experience. In this light, pragmatic thought was a “method only” intended to provide practical solutions to contemporary problems experienced by people and society. As a method only, pragmatism is concerned with the “respective practical consequences” of work, a concern that has implications for the present thesis (James, 2004, p. 45). In this case, pragmatism offered me not only a framework for mixing qualitative and quantitative research methods, but also practical tools to use in producing socially useful knowledge.

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5 Scientific determinism is inspired by classical physics, which holds that all or most of a man’s life is determined for him by universal laws (ref).
Furthermore, James expanded pragmatism’s conception of truth. Not only is truth proven by objective observation of predicted behaviours, he observed, but also by its ability to encourage a valuable emotion or behaviour. Using an example of God, James argued that God exists because He provides comfort and hope to believers (Walker, 2008). In this way, James was deeply influenced by his personal faith and training as a psychologist to advance a connection between religious fellowship and being cared for, comforted and loved. This is of course closely connected with the salutogenic effects of fellowship or social inclusion described in Chapter 2, which provides both tangible and emotional resources that buffer stressful experiences. Furthermore, James emphasized the “cash value” of truth and that all truths share the quality “that they pay” (Thayer, 1968). Thus, he said:

*Our account of truth is an account of truths in the plural, of processes of leading, realized in rebus, and having only this quality in common that they PAY. They pay by guiding us into or towards some part of a system that dips at numerous points into sense-percepts, which we may copy mentally or not, but with which at any rate we are now in the kind of commerce vaguely designated as verification. Truth for us is simply a collective name for verification-processes, just as health, wealth, strength, etc., are names for other processes connected with life, and also pursued because it pays to pursue them. Truth is MADE, just as health, wealth and strength are made, in the course of experience.*


Additionally, James’ work substantially influenced Husserlian phenomenology, a foundational concept that has implications for the present thesis. For instance Edie (1987) believes Husserl developed a number of his ideas on the intentionality of consciousness and the importance of experience by reading James, particularly his *Principles of Psychology*, in which he made famous the ‘specious present’ doctrine of temporal experience. James believed that ideas must be tested in experience. For James, human beings are first, and foremost practical beings hence he favoured experience over ideas (James, 2004). Although pragmatists’ dedication to lived-experience has been criticized as inadequate in that it does not pay attention to the manner in which phenomena appear to consciousness, it is beyond this thesis to explore this argument. However, it is the commitment to lived-experience with which this thesis is concerned. As we shall soon see, Husserlian phenomenology has
a dedication to lived experience and is more likely to capture the essence of reality than James’s doctrine of temporal experience.

Dewey’s version of pragmatism, which he called “instrumentalism,” is the view that knowledge results from the self-corrective process of experimentation. For Dewey, this process takes place within and is influenced by a social milieu (Hansen, 2012). Clearly, Dewey’s emphasis on the social environment of community-based moral and psychic values is consistent with his focus on ‘construction’ of meaning through previous knowledge and experience. As described by Greene (2007), Dewey acknowledged that the meaning of human experience is found in the transaction of knowledge between the objective reality and the internal mind of the knower, in each of which knowledge and meaning resides. Thus, he believed it "is not possible to divide in a vital experience the practical, emotional, and intellectual from one another and to set the properties of one over against the characteristics of the others” (Dewey, 1980, p. 55). It is for this reason Dewey is often cited as the philosophical founder of constructivism, a sociological theory of knowledge related to interpretivism, which applies to the qualitative part of the present study (Alexander, 2012; Garrison, 2009; Hickman, 2009).

More importantly, Dewey instrumentalism holds that ideas are instruments, or tools that humans use to make greater sense of their world (Gouinlock, 2009). In other words, instrumentalism treats theories as instruments or tools to help inquirers manipulate, communicate, understand, explain and predict their world. For these reasons, an emphasis on the role ‘what works in practice’ becomes the standard for the truth of assertions, the rightness of actions and value of appraisals (Rescher, 2001).

My stance as a researcher is pragmatic. Taking pragmatism as a paradigmatic stance permits the use of pluralistic approaches to obtain knowledge claims that have utility in informing men’s health practice as it takes the research question as the most important determinant of the research design (Giddings & Grant, 2009). More so, pragmatists recognise that every method has its limitations and that the different
approaches can be complementary. In other words, pragmatists do not get caught up in philosophical debates about which is the best approach. Rather, the choice of methods is based on the practicality of what works, contextual responsiveness to the demands, opportunities, and constraints to an evaluation situation and practical consequences (Tashakkori & Teddlie, 2010).

It is for these reasons pragmatic researchers grant themselves the freedom to use any of the methods, techniques and procedures to acquire knowledge, and it is the worldview that shaped my approach to this study. Researchers adopting this stance assert that while some paradigms are not incompatible with one another, they can be used in a complementary fashion in the same research project (Teddlie & Tashakkori, 2009). The complementary strengths thesis keeps the methods from each paradigm separate so as to draw on the strengths of each (Johnson, Onwuegbuzie, & Turner, 2007; Morse, 2003). Adding weight to this proposition, Biesta (2010) acknowledges that Dewey’s pragmatism is very helpful in overcoming some of the dualism and epistemological hierarchies contained in different methods and methodologies. In particular, Biesta suggest that Dewey’s pragmatism helps mixed methods researchers “to ask more precise questions about the strength, status, and validity of the knowledge claims developed on the basis of particular designs” (2010, p. 113).

In the current study, rather than tossing between which of the two paradigms is superior to gain knowledge, I believe research methodologies are complementary and, both have a place in my study. On one hand, I consider the interpretivist belief that men involved in Men’s Sheds are social actors who can provide subjective meanings to interpret and interact with the everyday life-world, and those interpretations and interactions can be investigated. Consequently, a qualitative method, using interviews with the participants was used to explore how they subjectively experienced the social world (Denzin & Lincoln, 2011). In other words, the qualitative part of this study is presented as valuable research in its own right.
On the other hand, I also considered the phenomenon in the way positivists believe - that there is an objective social world out there to be explored, in which there should be some causal relationships between participating in Men’s Sheds and some neuropsychological processes. As such, quantitative methods were used to analyse these relationships. In order to both understand and evaluate the impact of social inclusion provided by Men’s Sheds on the health of the men involved, I did not commit to any one system of reality (Creswell, 2013). Rather, I was guided by the practicality of what works, the available resources to complete the project and the aim of finding answers to my manifold research questions (Onwuegbuzie & Leech, 2005). Therefore, I drew liberally from both the empirical-analytical (positivists) and the anti-positivism (also known as interpretivism) paradigms. In the next section, the methodological choice of this study will be outlined.

4.3.3 Methodological Choice in this Thesis

The previous section addressed my philosophical assumptions. I favoured a pragmatic stance. Consequently, I located the methodological considerations in both interpretivist and positivist approaches. Therefore, the methodological choice in this thesis was mixed methods research, where the quantitative and qualitative methods were combined in a complementary way. The following section describes mixed methods research as a methodology along with some of the major developments in mixed methods research. Such understanding is invaluable since the use of mixed methods is not always a comfortable implementation of both narrative and numeric data and their analyses. Rather, using this methodology requires an embodied, choice-rich journey of exploration that value both objective and subjective knowledge (Morgan, 2007).

4.4 Mixed Methods Research as a Methodology

A key feature in the current study is the use of mixed methods research as a methodology. Some researchers have been combining qualitative and quantitative research and deny that such “a wedding of methods is epistemologically incoherent”
More recently, Creswell and Plano-Clark (2011) have called for the adoption of methodological eclecticism where researchers are free to combine methods by choosing what they believe to be the best tools for answering research questions. This reasoning stems from rejection of the incompatibility of methods thesis, “which stated that it is inappropriate to mix QUAL and QUNT methods due to fundamental differences (incommensurability) between the paradigms (i.e., post positivism, constructivism) supposedly underlying those methods” (Creswell and Plano-Clark, 2011, p.8).

Also called multi-methodology, mixed methods research is an approach to professional research that combines the collection and analysis of quantitative and qualitative data (Creswell, 2013). This study adopts the Johnson, Onwuegbuzie and Turner definition of mixed methods research. They defined mixed methods research as the combination of “elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration” (2007, p. 123). In this definition, the authors did not view mixed methods simply as methods but more as a methodology. As a methodology, mixed methods research is argued to be valuable and practical as it is likely to take advantage of triangulation and complementarity (Johnson & Onwuegbuzie, 2004).

Triangulation involves mixing of data or methods so that diverse viewpoints cast light upon a topic (Mertens & Hesse-Biber, 2012; Olsen, 2004). For example, qualitative and quantitative data could be compared to see if similar results are being found. If the conclusions from each of the methods are the same, then validity is established. After working as a nurse using a wide range of methods and methodologies, I agree that triangulation is key to generate dialectic learning. According to Oslen (2004, p. 4), “dialectic learning thrives on the contrast between what seems self-evident in interviews, what seems to underlie the lay discourses, what appears to be generally true in surveys, and what differences arise when comparing all these with official interpretations of the same”. Using different sorts of data and data gathering strategies “pinpoint the values of a phenomenon more
accurately by sighting in on it from different methodological viewpoints” (Brewer & Hunter, 2006, p.185).

The logic of mixed methods research methodology is to overcome any deficiencies inherent in any one particular method. It also allows attacking a research problem with the arsenal of each approach (Creswell & Plano-Clark (2011). Another reason for combining qualitative and quantitative methods using triangulation is to overcome bias in research. The limitation of being locked into only one approach is that all researchers bring to the study their own perspective, which “is likely to influence the people observed, the questions asked, and ultimately the results themselves” (Henn, Weinstein, & Foard, 2005, p.21). This argument resonates with Denzin’s early observation that triangulation is an action plan that minimizes common method bias “that stem from single methodologies” (Denzin, 1989, p.236).

More significantly, triangulation offers the benefits of cross-validation of findings and a more holistic understanding by capturing the context in which phenomena occur (Patton, 2002). In making this argument, researchers also tend to emphasise the role of complementarity. Complementarity occurs when qualitative and quantitative results are kept as separate as possible and then each type of data analysis used to enhance the other (Creswell & Plano-Clark (2011). Together the data analyses from the two methods provide two different but non-conflicting conclusions or interpretations that create a bigger picture. Creswell and Plano-Clark refer to this position as *complementary inference*.

### 4.4.1 Mixed Methods in Health Research

A number of authors, particularly from nursing and the health sciences support mixed methods research’s usefulness and potentiality in investigating complex phenomena of concern to their fields (see, for example, Andrew & Halcomb, 2009; Broom & Willis, 2007; Everest, 2014). Carr and colleagues conducted mixed methods research aimed at understanding the patterns and frequency of anxiety in patients undergoing surgery. As part of the findings, they noted that the lived experience of
the patient not only provided a validation of the quantitative findings but more importantly offered insight and explanations into processes of care which contributed to anxiety (Carr, Brockbank, Allen, & Strike, 2006).

The growth in popularity of mixed methods approaches has been reported in other health-related research, such as in health promotion, evaluation and addressing inequities (Mertens, 2012; Morrow et al., 2009; Njeru, Bystad, Shayo, Nyamongo, & Fylkesnes, 2011; Ozawa & Pongpirul, 2013). This methodological development has been driven by the increasing complexity of research problems relating to social and biological determinants of health. In fact, it has been observed that the “nature of the problems facing public health, such as disparities among populations, age groups, ethnicities, and cultures; poor adherence to treatment” calls for combining methods in order to improve the quality and scientific power of data (Creswell, Klassen, Plano Clark, & Smith, 2011, p.2). Motivated by the methodology development in nursing and health research, I adopted a mixed method research in the present study to examine the research problem.

### 4.4.2 Mixed Methods Research in this Study

To achieve the objectives of the study and answer the research questions as presented in section 4.2, qualitative and quantitative methods were combined for data collection and analysis. The rationale for adopting this methodology was to ensure a more comprehensive understanding of all the variables potentially impacting on the health and wellbeing of the men involved, such as experiences of social inclusion, psychological stress, stress biomarkers (cortisol levels, HRV), resting heart rate and psychological health outcomes (health-related quality of life and anxiety). In an otherwise well-designed qualitative study, which could stand alone as a valid research project, this thesis incorporated a quantitative approach to complement it.

The use of qualitative methods provided an in-depth understanding of the lived experiences of social inclusion provided by Men’s Sheds. However, I also wanted to
provide a better understanding of the effect of participating in Men’s Sheds on resting HRV, cortisol levels and health-related outcome measures in individuals involved. Importantly, previous studies suggest that the sense of meaning derived from belonging to Men’s Sheds reduces psychological stress in men involved (Ballinger et al. 2009). This reduction of stress, however, is based on self-reports or interpretation by researchers. There was an impetus to measure and test the range of variables that might contribute towards understanding the impact of Men’s Sheds on psychological stress. As well, there were very powerful voices from the Men’s Shed movement, particularly the national executive who were keen on testing a range of biological variables longitudinally, to ultimately determine the sheds’ potential as agents of health promotion, an issue that interested me as well. Consequently, I found that it was difficult to carry out a solely qualitative study because some of the concepts needed objective measurements.

Given the above consideration, and also motivated by the methodology development in nursing and health research that has been discussed in the previous subsection, I used mixed methods research that combines a hermeneutic phenomenological study and one group pre-and post-test study to investigate the impact of Men’s Sheds on health the health of the men involved. Besides, mixed methods research seemed to be more suitable to explore the objectives of this study and to answer the research questions than singular methods. The next section will show how the research was designed.

4.5 Research Design

Research design provides “procedures for collecting, analysing, interpreting, and reporting data in research studies” (Creswell & Plano Clark (2007, p.58). Thus, research design is the glue that holds the research project together. A great deal of attention has been paid to the classification of mixed methods design. For example, Creswell and Plano Clark (2007) have classified mixed methods designs into four major types. These are triangulation, embedded, explanatory and exploratory designs. Other classifications such as equivalent status and dominant/less dominant
or transformative and pragmatic parallel designs have also been reported (see, for example, Mertens, 2007; Mertens & Wilson, 2012; Tashakkori & Teddlie, 1998; Teddlie & Tashakkori, 2010). However, there are more similarities than differences among these classifications (Creswell & Plano Clark, 2007). The only important issues, which need to be considered in every piece of mixed methods research designs include 1) the sequence of the data collection and analysis, 2) the priority given to the respective methods in the study, and 3) the stages of the research process at which the qualitative and quantitative data are connected and the results are integrated (Creswell & Plano Clark, 2007; Creswell, Fetters, & Ivankova, 2004; Ivankova, Creswell, & Stick, 2006). In this section, the decision-making process of this study will be addressed in light of these issues.

4.5.1 The implementation decision of this study

Implementation refers to the sequence of the data collection and analysis (Creswell & Clark, 2007; Morgan, 1998). Sometimes this decision is called timing and ordering of methods within the study (see, for example, Ivankova et al., 2006). There are two ways this may be done. In concurrent timing or parallel study design, the qualitative data and quantitative data are collected at (or approximately at) the same time but analysed separately. On the other hand, in a sequential study, these data sets are collected over the period of time in two distinct phases and analysed separately (Creswell & Plano Clark, 2007; Ivankova et al., 2006). Teddlie and Tashakkori (2009) suggested that the concurrent design is more appropriate for a mixed methods study in which the purpose is to bring together the differing strengths and non-overlapping weaknesses from two databases through data triangulation and complementarity. If the research purpose is to compare multiple levels within a system by combining quantitative data and qualitative data, then the sequential design is more likely to be chosen (Creswell & Plano Clark, 2007).

In this study, a concurrent mixed methods approach was adopted due to both theoretical and practical considerations. The main purpose of this study was to examine the impact of Men’s Sheds on the health of the men involved.
Understanding this phenomenon requires both narrative and objective clinical data, in order to provide a broad and complementary explanation of the phenomenon. In other words, this study aims to seek triangulation and complementarity. As Creswell and Plano Clark (2007) suggest, concurrent design seems to be suitable for such type of mixed methods research. From a practical point of view, I wanted to analyse and interpret the narrative and objective clinical data in a complementary manner. In this sense, rather than conducting two distinct analyses and interpretation, it was better to analyse and interpret them approximately at the same time.

Apart from the complementarity reason, the choice of collecting, analyzing and interpreting the qualitative data and quantitative data at (or approximately at) the same time was to a large extent influenced by resources available to complete this Ph.D project. The qualitative study involved undertaking in-depth interviews with the men involved in Men’s Sheds. One of the primary disadvantages of qualitative research is that it can be time-consuming and can last for months or even years (Silverman, 2013). Collecting data through in-depth interviews requires considerable planning and organization - resources that are not always available especially for a PhD project. On the other hand, the quantitative research involved the collection of outcome measures at baseline as well as at 6 months follow-up. As well, some participants were involved in both studies hence it was convenient to collect both data sets at the same time. The next sub-section describes the priority decision.

### 4.5.2 The Priority Decision of this study

Priority also known as weighting refers to which method; either qualitative or quantitative is given more emphasis in answering the research question. According to Creswell and Plano Clark (2007), there are three possible weighting options for a mixed methods design - equal priority, quantitative priority and qualitative priority. In equal priority, both quantitative and qualitative methods play an equally important role in addressing the research problem. In quantitative priority, the quantitative method plays a more important role in addressing the research problem than the other method. The same goes for qualitative priority where the qualitative
method plays a more significant role than the other method (Creswell & Plano Clark, 2007). Weighting is often depended on numerous considerations such as the research purposes and some practical issues (Creswell, 2003; Creswell & Plano Clark, 2007; Morgan, 1998).

In this thesis, more weighting was given to the qualitative approach. This decision was heavily influenced by the research purpose, which was to explore the impact of Men’s Sheds on the health and wellbeing of the men involved. Qualitative methods, in particular, interpretive research methods are particularly suited to exploring and disclosing more information about little-known research topics (Greeff, 2009). As discussed in Chapter 1, 2 and 3, there is a dearth of research that has described the impact of Men’s Sheds on the health of the men involved and even on the more general question of the impact of social support on men’s health. Therefore, the primary aim of this study was to, (a) examine the perceptions, understandings and experiences of social inclusion provided by Men’s Sheds; and, (b) describe how these perceptions, understandings and experiences influence men’s health and wellbeing. In such a situation, the qualitative study was more valuable in terms of understanding deeply the phenomenon and adding knowledge to the theoretical foundations. Seeking to understand the phenomenon in-depth meant turning to those who experience and can tell about it (Van Manen, 2001). In-depth interviews were the means by which these men told me of their understandings of the impact of Men’s Sheds on their health and wellbeing.

Apart from the research purposes reason, the weighting decision was to a large extent influenced by some practical considerations as well. The relative weight of the qualitative study over the quantitative study reflects the initial methodological thoughts for this study. In fact, this study was envisaged from my personal and professional experience and originally designed as a qualitative research project. I believed the impact of social inclusion provided by Men’s Sheds on health would show itself in the experience of the men involved. However, as a nurse who value both narrative and numerical data in everyday life some practical decisions had to be made to include both data sets in the evaluation of Men’s Sheds. As well, there was
a keen interest from practitioners involved in Men’s Sheds to see if participating impacted on stress levels. In subsequent discussions with my doctoral supervisor Professor John Macdonald, complementing the qualitative study with a ‘small’ quantitative experiment was well thought-out as practical, especially as it was understood within the biopsychosocial model. The decision to make the quantitative study small, and as a complementary study was based on funding and time limitations. Considering the above issues, obviously, the best choice was to conduct a concurrent qualitative-dominant mixed methods study. The next sub-section describes the data integration decision.

4.5.3 The data Integration Decision of this study

Data integration decision also known as data mixing refers to how the qualitative and quantitative data relate to each other (Ivankova et al., 2006). This is an essential phase in mixed methods as research shows that in most cases, quantitative and qualitative components are rarely integrated or mixed with each other. Thus, the quantitative and qualitative components are treated as separate domains and do not mix with each other (Bazeley, 2009b; Bryman, 2007; Jones & Bugge, 2006). For instance, Bryman (2006) examined 232 published mixed methods research and found the lack of data integration. He suggested that if mixed methods researchers wish to make the most of the data they collect, they must solve the integration issue, a point that has been stressed by others such as Creswell and Plano Clark (2011).

The point of interface and mixing strategies are two useful concepts used in integrating quantitative and qualitative results. The point of interface, also known as the stage of integration refers to the point in the research process where the two strands of data are mixed (Morse & Niehaus, 2009). Integration may occur at any of the following four points during a study’s research process - interpretation, data analysis, data collection and design. In this thesis, qualitative data and quantitative data were integrated at the stage of results reporting. This design type is defined as a “convergent parallel design” as it allows integrating quantitative and qualitative results in the overall interpretation (Creswell & Plano Clark (2011, p. 77).
4.5.4 Description of Convergent Parallel Design

In convergent parallel design, the researcher collects and analyses both kinds of data followed by a merging of the two sets of data in an overall interpretation. It has also been conceptualized as a triangulation design (Creswell, Plano Clark, Gutmann, & Hanson, 2003; Kettles, Creswell, & Zhang, 2011; Ostlund, Kidd, Wengstrom, & Rowa-Dewar, 2011). The purpose of the convergent parallel design is threefold - it brings together different strengths and non-overlapping weaknesses from the two methods, illustrates quantitative results with qualitative findings and synthesizes complementary quantitative and qualitative results to develop a more complete understanding of the phenomena of the study (Creswell & Plano Clark, 2011). The strengths of convergent parallel design are that it has already been used in many studies and is “probably the most common approach used across disciplines” (Creswell & Plano Clark, 2011, p.77). Consequently, experiences have been gained in implementing its procedures. Figure 4.1 illustrates the stages in implementing a convergent design, adapted from Creswell and Plano Clark (2011).

There are four main steps involved in implementing a convergent design. The first step involves the collection of both strands of qualitative and quantitative data concurrently but in separately designed studies. In the second step, both data sets are analysed separately and independently from each other using typical qualitative and quantitative analytic procedures. The third step involves identifying content areas represented in both data sets and then merging the two sets of results. Finally, step four involves interpreting the merged results (Creswell & Plano Clark, 2011).

In this study, the qualitative and quantitative data collection and analyses were carried out in parallel but within separate scientific and philosophical paradigms. Both qualitative and quantitative parts of the design were fixed, and data analyses carried out and reported in separate sections using the appropriate scientific language and methods customary to the respective methods. Once analysed, the
respective results were then drawn together under an “umbrella paradigm” (Creswell & Clark, 2011, p. 78). This signifies the pragmatist stance of the researcher.

Figure 4.1: Flowchart of the basic procedures in implementing a convergent design

Design the quantitative strand:
- State quantitative research questions and determine the quantitative approach.

Collect the quantitative data:
- Identify the quantitative sample
- Collect close-ended data with instruments such as questionnaires.

Analyze the quantitative data:
- Analyze the quantitative data using descriptive statistics and inferential statistics.

Use strategies to merge the two sets of results:
- Identify content areas represented in both data sets and compare, contrast, and/or synthesize the results in a discussion or table.
- Identify differences within one set of results based on dimensions within the other set and examine the differences within a display organised by the dimensions.
- Develop procedures to transform one type of result into the other type of data (e.g., turn themes into counts). Conduct further analyses to relate the transformed data to the other data (e.g., conduct statistical analyses that include the thematic counts).

Interpret the merged results:
- Summarise and interpret the separate results
- Discuss to what extent and in what ways results from the two types of data converge, diverge, relate to each other, and/or produce a more complete understanding.

Adapted from Creswell and Plano Clark (2011, p. 79).
Data integration is the most important stage in mixed methods research as it “involves the researcher drawing conclusions or inferences that reflect what was learned from the combination of results from the two strands of the study” (Creswell & Plano Clark, 2011, p. 67). Moreover, the integration of two datasets achieves evidence triangulation in some important findings and thus enhances the validity of the overall research.

Mertens (2011) highlights that it is important for a mixed methods study to “explain clearly how the results were integrated and the contribution to improve understanding that was achieved based on that integration” (2011, p. 5). In this thesis, the qualitative strategies are worked out and described first, and the quantitative strategies subsequently. In this way, the two strands of data were brought together to answer the integrated research questions outlined in section 4.2. 4. The integration of findings enabled empirical results from one approach to complement the other in order to develop a more complete understanding of the phenomena of the study. The strategy for integration of quantitative and qualitative empirical results is discussed in detail, in Chapter 9.

### 4.6 Chapter 4 Conclusions

This chapter discussed the methodological decision the researcher made and the overall procedures for collecting, analysing, interpreting, and reporting data. The underlying philosophical assumptions were addressed at the beginning of the chapter. Pragmatism provided me with the philosophical orientation that both informed the study and underpinned the methods used to design and carry out this investigation. It allowed me to integrate qualitative data and quantitative data within a single study. This approach coincides with my own ontological and epistemological perspective that reality is something that can sometimes be generalised and measured and also something that is unique to each individual. This worldview supports the adoption of mixed methods research in this study possible.
Mixed method research is a growing area of methodological choice for many researchers in social science. In the fields of nursing and health, researchers have also called for the combination of different research approaches to assessing the same phenomenon. Given the overall aim of this study, mixing qualitative and quantitative methods made it possible to take advantages of triangulation and complementarity, and enhance the validity of the overall research. Several important issues related to the mixed methods research design, such as implementation, weighting, and mixing decisions were discussed. The choices were guided by the research purpose and some practical considerations. Specifically, this study was designed as a convergent parallel design in which the qualitative and quantitative data were simultaneously collected and analysed, followed by a merging of the two sets of data in an overall interpretation. The next chapter describes in detail the philosophical hermeneutics that both informed and underpinned the methods used to design and carry out the qualitative part of the study.
5 Chapter 5: Qualitative Methods

5.1 Introduction

This chapter describes the qualitative strategies, the research design and methods, and the analytical procedures I developed to answer the first three research questions: 1) What is the impact of Men’s Sheds on the health of the men involved? 2) What are the experiences of men involved in Men’s Sheds? 3) Does participating in Men’s Sheds have any effects on stress in men involved? In this section, I explicate the hermeneutical philosophy of Hans-Georg Gadamer (1900-2002) and its appropriateness for developing understandings of the impact of social inclusion provided by Men’s Sheds on the health of the men involved. The understanding and definition of hermeneutics will be presented, and after that a more elaborate description of the analysis process will be described including the changes that took place along the way.

5.2 The Place of Hermeneutic Phenomenology in this Study

Among many traditions of qualitative analysis, I have chosen to work primarily in the hermeneutic tradition as described by Gadamer (2004). The decision is driven by the need to understand lived experience of being involved in Men’s Sheds and how these experiences influence the health and wellbeing of the men involved. Hermeneutic phenomenology involves the interpretative illumination of deeper realities hidden within the lived experience. It establishes a relation to the data material, where “truths” or scientific findings emerge as a process of embedding oneself, mindfully, in the data material during the search for meaning and understanding (Van Manen, 2001).

As a research technique, I find it fitting especially well for the study of understanding the effect of Men’s Sheds on the health of the men involved, where the complexity of experiences of being socially included can be interpreted at deeper and deeper
levels much like the interpretation of dreams. Hermeneutics has been described as an art or technique more than as a method and has its roots in phenomenology (Drummond, 2006).

Phenomenology is the study of conscious experience as experienced from the subjective or the first-person point of view (Smith, 2011). Edmund Husserl (1858-1938) is credited with having helped to create a landscape wherein phenomenology could seed and blossom. Educated as a mathematician and receiving his doctorate in that discipline, he chose to study philosophy under Franz Brentano⁶ (Drummond, 2006). Often referred to as the father of phenomenology, Husserl developed phenomenology in contradistinction to the prevailing scientific revolution and research led by natural science philosophers such as Rene Descartes and Isaac Newton (see, for example, Gardner, 2013; Moran, 2012; Rensenbrink, 2013; Sawicki, 2011).

Husserl advanced the view that the metaphysical aspects of everyday natural living were not only relevant but also essential to any comprehensive understanding of it (Drummond, 2006). He acknowledged that an experience was the source of all knowledge. This was a major break with the positivist orientation of the science and philosophy of his day. To begin with, Husserl advanced a form of phenomenological intuition that allowed the inquirer to look at the phenomenon with a child-like sense of wonder, which he called *anschauung* - looking at phenomena, being conscious of that phenomena (Stumpf, 1994). He claimed looking at the phenomena and being conscious of that phenomena can help empty all pre-conceived ideas and theories (Stumpf, 1994). The reality of whether this is actually possible has been criticised in the literature, but it is beyond the scope of this thesis to explore this.

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⁶ Franz Brentano (1838-1917) was a German philosopher best known for his reintroduction of the concept of intentionality - a concept, which concerns itself with the acts of the mind rather than with the contents of the mind. In addition to Husserl, he also taught Masaryk and Freud, and through them Brentano’s work influenced Heidegger” (Mullar, 2003, p.1).
Influenced by Brentano’s concept of intentionality, Husserl further claimed that minds and objects both occur within an experience. Husserl believed that by intentionally directing one’s focus, it was easy to develop a description of particular realities (Pivcevic, 2013). Finally, with his strong foundation in mathematics and science, Husserl acknowledged that one needed to ‘bracket out’ the outer world of individual biases (Gearing, 2004). By so doing, Husserl believed the researcher unclutters the domain of inquiry. Bracketing creates an experiential clearing of bias from historical experiences in order to actually see things ‘as they are’ through intuitive seeing (Tufford & Newman, 2012).

While it is clear Husserl sought to show the purely immanent character of conscious experience by means of careful description, critics of his phenomenology such as Ray (Ray, 1994) argue that attempting to hold in abeyance one’s own preconceptions and presuppositions while reflecting deeply on the experiences of others (which is what is meant by “bracketing”), presents a methodological dilemma. Ray argues that humans are connected inextricably to the world, and thus researchers cannot get free from their presuppositions and intentions. LeVesseur (2003) concurs with this idea when she points out that it would be impossible to hold in abeyance one’s preconceptions because human beings are always already engaged in interpreting their experience. I would agree with both Ray and LeVesseur. For example, if I bracketed my pre-understanding about social inclusion and men’s health, then, it would have been difficult to suspend these as they correspond to my knowledge, experience and beliefs as a nurse and researcher. Like Martin Heidegger (1889-1976), I hold that presuppositions cannot be suspended because they constitute the possibility of intelligibility and meaning.

Martin Heidegger was a student of Husserl and later his assistant. In most discussions Heidegger, just like Husserl rejected Descartes metaphysical dualism and “maintained that humans must be understood to exist fully within this world, not detached and autonomous spiritual minds” (Feldman, 2000, p.54). However, he later developed his phenomenological project in a direction that ultimately rejected some of the basic tenets of Husserlian phenomenology. For example, Heidegger adopted
the view that understanding and interpretation are “foundational modes of being-in-the-world” (Palmer, 1969, p. 42). It has been observed that Heidegger’s use of hyphens in the phrase ‘being-in-the-world’ illustrates the primordial, the “from the beginning” connectedness of humans is “immersed in the world, involved with it, permanently intertwined and occupied with it even when it feels alienated or lonely” (Chalquist, 2014). In other words, as human beings, we are constantly interpreting the world around us, hence living in the world made up of interpretations. This took phenomenology in a different direction, soon to be followed by others such Hans-Georg Gadamer, a student of Heidegger, who extended his hermeneutic phenomenology in ways that are very relevant to this study.

Even though, Gadamer himself acknowledged the influence of Heidegger’s phenomenology, ironically, it was also Heidegger (1973, as cited in Grondin, 1994, p. 2) who commented, “‘hermeneutic philosophy’ - that’s Gadamer’s business,” pointing to the distinctiveness of Gadamer’s philosophical hermeneutics in contemporary hermeneutic thought. From the onset, Gadamer described the task of hermeneutics as entering into dialogue with the text of lived experience.

The goal of this research is to understand lived experience. Consequently, understanding the life-texts contained within the experiences of social inclusion provided by Men’s Sheds is vital to understanding its impact on the health of the men involved. A fundamental philosophic question must still be asked. That is, how is this understanding going to be possible? In Truth and Method, Gadamer (2004) sets about answering this question through his theory of hermeneutic experience. While I describe these fundamental conditions somewhat separately, they entwine together in the play of the hermeneutic engagement. They come together as the enquirer experiences interpretive thinking (Gadamer, 2004).
5.2.1 Historicality of Understanding

According to Gadamer, our understandings are historically formed and mediated by our experiences of the phenomena we encounter. By virtue of what has gone before and our experiences in the world, we can understand the world around us. In other words, we are the effect of our historically acquired, traditional knowledge even when we are not aware of it. He maintains, “history does not belong to us, but we belong to it” (2004, p. 245). Furthermore, from what has gone before, we acquire ‘habits of thinking’ (Gadamer, 2004). How then, one might ask an epistemological question, do we avoid prejudice or bias? To answer in Gadamer’s own words: “the prejudices of the individual, far more than his judgments constitute the historical reality of his being” (Gadamer, 2004, p.245). Therefore, prejudice has a positive part to play in understanding and is not necessarily an obstacle to knowledge.

Pre-understanding allows access to the world and creates expectations about what might be anticipatory7 to the interpretations (Fleming, Gaidys, & Robb, 2003). Interpretation and understanding occur when pre-understandings are brought to consciousness, and the event occurs in language through the dialogue with others and oneself (Gadamer, 2004). In this study, the pre-understandings were brought into the discussions with my colleagues, supervisors and the men involved in Men’s Sheds and addressed before the dialogue could move on.

Prior to confirmation of candidature, my supervisor engaged me in a dialectical process of elucidating my presuppositions. The moment just presented itself. I had not anticipated that moment was to become my ‘self-interview’ (Richardson, 2002). I had not already thought about what I might say. I suddenly found myself engaging with the questions asked of me. I was invited to think about the impact of social inclusion provided by Men’s Sheds on men’s health. My pre-understanding was from my experiential knowledge gained while working as a nurse, my father’s and

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7 Anticipatory from Heidegger’s “anticipatory resoluteness”, is the form of Being-towards in which one looks forward to a possible way to be.
grandfather’s experiences as well as from a review of the literature on Men’s Sheds and men’s health.

It was through describing my pre-understanding and locating my pre-understandings within a social determinants of health approach that I also discovered my area of research had the potential to draw upon one or more theoretical frameworks from the social, behavioural, or biological sciences to inform all phases of the study. For instance, I believed a small quantitative study could complement a hermeneutic study. I believed human functioning is comprised of biological, psychological and social aspects, in which a great many contexts of parts and wholes could be identified (Kail & Cavanaugh, 2012). It was in this conversation with my supervisor that it was agreed to complement this study with a small quantitative study to provide opportunities for the integration of biological measures. We also had shared knowledge that there were powerful voices within the shed movement who were keen to know if participating in Men’s Sheds impacts on biological measures. The quantitative strategies are described in Chapters 8.

Addressing the pre-understanding mitigated the pitfall of confirming my own beliefs and biases about the topic (Geanellos, 1998). It helped me work together with the men involved in Men’s Sheds through a dialogue to reach a shared understanding of their experiences. The back and forth conversation with the men allowed me to achieve a deep understanding of their day-to-day life experiences in the shed. Each statement below reflects my pre-understandings related to the topic of research.

- Men’s health researchers are in a position to listen to the experiences of men involved in Men’s Sheds in order to understand them and inform policy and practice.
- The experiences of being cared for and valued can be critical to help men through the stress of tough times, and it is anticipated that each may have some experiences that are common, but there will also be some experiences that are related to the individual context.
- The day-to-day life experiences of social inclusion can promote men’s health physically as well as emotionally, and the absence of social inclusion can
affect their lives negatively. I have a great deal to learn from these experiences.

• Understanding the meaning of the phenomenon of interest requires a conversation with the men involved and a commitment to remain open to the meaning conveyed through language. It is expected that through dialogue and language, the participants and I as a researcher will be able to reflect and create meaning on the impact of social inclusion provided by Men’s Sheds.

• Social inclusion provided by Men’s Shed is salutogenic and has the potential to reduce the participants’ stress levels.

The dialogue, which was initiated regarding these prejudices, uncovered new understandings during in-depth interviews with the participants and confirmed the appropriateness or inappropriateness of some of these beginning understandings. The new understandings provided entry points for questioning the men and the text to gain relevant responses to the research questions.

5.2.2 The Hermeneutic Circle

The hermeneutic circle is a metaphor for the dialectical task, involving conversations and questions. It involves movement backwards and forwards between the background of shared meanings and the experience of the individual living-in-the-world (Thompson, 1990). It is the idea that the whole can be understood through the study of the particular and the particular can be understood by study of the whole. Entering this circle is a process of consciousness. It is the way in which access to the phenomenon is achieved through a circular rather than a linear process (Gadamer, 2004). Being in the hermeneutic circle means being receptive to the text’s speaking. In practice, this includes moving back and forth between the text and interpretation, interchanging between understanding and interpretation or interchanging and balancing the parts and the whole.
An example of how this concept was applied to this research is contained within the interviews. The participants’ stories were not linear, instead, they were contextual, moving back and forth in time, telling some exciting stories; introducing some sad ones; telling me what happens in Men’s Sheds, how they felt about their health and wellbeing, and so on. These stories were analogous to the hermeneutic circle in that they moved between the “whole” of the subject under discussion (participating in Men’s Sheds) to the “part” which was under scrutiny in the project (impact on health).

Being in the hermeneutic circle also means being questioned by the text and questioning it to uncover answers. This mode of dialectical conversation lets the text’s “truth” be seen (Gadamer, 2004). In this study, the dialogue was kept open through question and answer so that the participants were able to converse in whichever way they wished. The appropriate question and open approach allowed the study participants to respond and take me with them through their experiences. I used the main question; tell me why the Men’s Shed is important to you? I also used the questioning probes to maintain a focus on their experiences such as “Can you tell me more about your experiences in the Men’s Shed”. The probes depended on the course of the conversation, and I let the men control the flow of the conversation (Walker, 2011).

5.2.3 Fusion of horizons

Another condition for understanding is called the ‘fusion of horizons’. The horizon according to Gadamer (2004, p.302) is “the range of vision that includes everything that can be seen from a particular vantage point.” In this sense, horizons are not static but continually developing and changing because we need to test, expand, and maybe even leave behind our prejudices. The fusion of horizons occurs when the different vantage points of the researcher and the participant come together through language during the dialogue or through a dialogue with the text (Brown, 2012).
In this study, I have shown how the fusion of horizons occurred during in-depth interviews between the men and me, and the text and me to create a new meaning. The new understandings provided entry points for questioning the men and the text to gain appropriate answers to the research questions. My pre-understanding merged with the understanding of the men involved in Men’s Sheds and with their responses to the probing questions and we reached another level of the horizon and a newly shared meaning of the phenomenon of interest (Gadamer, 2004). In other words, I played a role in co-creating the text; the research text was a product of my partnership with the men involved in Men’s Sheds. For example, apprehending my hermeneutical situation showed I had a limited view of what it was to be involved in Men’s Sheds. From this came one of the questions I raised with each participant; can you tell me more about your experiences in the Men’s Shed? Therefore, the interpretations that were brought forward in the study were a fusion of our understandings; theirs with mine and mine with theirs.

5.2.4 Linguisticality of Understanding

The other basic model of understanding that Gadamer emphasizes on is language. Language is the key medium through which conversation occurs. According to Gadamer (2004), “language is the fundamental mode of operation of our being-in-the world and the all-embracing form of the constitution of the world” (2004, p. 3). Language as an element of human being-in-the-world is comprehensive because it is also through it that we encounter others and ourselves. In this respect, “language is itself understood as essentially dialogue or conversation” (Malpas, 2013b, p.12). According to Gadamer, partners in a conversation do not talk indiscriminately to one another, but through a structure of question and answer. Thus, he said:

To conduct a dialogue requires first of all that the partners do not talk at cross-purposes. Hence it necessarily has the structure of question and answer. The first condition of the art of conversation is ensuring that the other person is with us. To conduct a conversation means to allow oneself to be conducted by the subject matter to which the partners in the dialogue are oriented . . . Dialectic consists not in trying to discover the weakness of what is said, but in bringing out its real strength. It is not the art of arguing

(Gadamer, 2004, p. 166-167)
In this study, the dialogue was kept open through question and answer or interpretive events (in-depth interviews) that created a common language. This dialogue enabled the participants’ language to be documented thus producing texts of their life-worlds that I used to develop interpretations and understandings of their being-in-the-world. I use the term ‘text’ to refer to the transcribed dialog, in the form of textual data, from the interviews held with the men involved in Men’s Sheds. In Chapter 6, where appropriate to the analysis I have included an etymological description of some words. As interpretive inquiry and hermeneutic inquiry is a textual analysis of language, understanding word origins are necessary and appropriate (van Manen, 2001).

In summary, philosophical hermeneutics proved to be both relevant and useful for investigating the impact of Men’s Sheds on the health of the men involved in this study. The principles of philosophical hermeneutics facilitated the expansion of data by adding depth to the content. I have used the perspectives of Gadamer’s philosophical hermeneutics to view the world as the participants and myself experienced it and identified research questions, data collection and analysis within this orientation. Philosophical hermeneutics offered a research strategy that assisted me to participate in a conversation with the men thereby securing an understanding of the phenomenon under investigation.

My horizon of understanding grew against a background of my pre-understandings. This hermeneutical process was approached with the necessary openness to other possible horizons of meaning. It enabled me to achieve deep insight and find new meaning in a text by surpassing my own preconceptions. Remaining in the hermeneutic circle and the constant working out of prejudices that surfaced across the duration of this project led to the development of a reasoned interpretation of the impact of Men’s Sheds on the health and wellbeing of the men involved. Language was the vehicle by which this understanding occurred. In the next section, I outline the research design and the methods and procedures used to develop the understandings of the impact of social inclusion provided by Men’s Sheds on the health and wellbeing of the men involved. I provide a detailed account of what
happened in my application of the proposed research design and its associated methods. I also include commentary on my self-reflections as the researcher and interpreter, which were vital to maintaining an open and critical stance throughout the study.

5.3 Research Design and Methods

The design was exploratory in nature as my aim was to gain in-depth understanding and greater clarity of the phenomena in question. The purpose of an exploratory study is to provide insights and understanding of a phenomenon that has not yet been described (Maxwell, 2012). Hermeneutic phenomenology is not itself a research method hence does not have a step-by-step formula to follow for data collection and analysis. As such, there is not one way to follow. There are, however, a few guidelines for phenomenologists to follow. Thus, in this study, I ventured out following the guidelines set by van Manen (1990), which provide a template on how to go about being in the hermeneutic phenomenological encounter. I found van Manen’s method reflecting the philosophical assumptions of Gadamer in a number of ways. His method aims to uncover meaning from the life-world, and does not epoché or bracket the researcher’s pre-understanding and assumptions about the existence of an external world. Moreover, it advocates balancing between the whole and the parts, which reflects the notion of the hermeneutic circle.

While these six procedures are neither absolute nor fixed, I found them a useful guide when dealing with the phenomena under investigation. They include: 1) turning to a phenomenon which seriously interests us and commits us to the world; 2) investigating experience as we live it rather than as we conceptualise it; 3) reflecting on the essential themes which characterise the phenomenon; 4) describing the phenomenon through the art of writing and rewriting; 5) maintaining a strong and orientated pedagogical relation to the phenomenon; and 6) balancing the research context by considering parts and whole (van Manen, 1990, p. 30-31).
5.3.1 Turning to the Phenomenon

The first activity described by van Manen is turning toward the phenomenon of interest. Consequently, I turned to the research question: ‘What is the impact of Men’s Sheds on the health of the men involved?’ because that was where my interest in this study laid. When I analysed the data, I continually referred to this question, to ensure that the methods used remained appropriate to answer it. This step was continuous throughout the research process. I also referred to the sub-questions: What are the experiences of men involved in Men’s Sheds? What meanings do they attach to their experiences of social inclusion provided? Moreover, does belonging to Men’s Sheds have any effects on stress in men involved? Beyond this initial turning to the phenomenon, it was the aim of the study to dig deeper and to find the essence of the meaning that is within the lived experience of men involved in Men’s Sheds. Chapter One of this thesis described the background of this research and outlined the phenomenon of interest.

5.3.2 Investigating Experience as we Live it

Hermeneutics focuses on the experiences of interpretation and human understanding within the life world. Seeking to understand the phenomena of being socially included in Men’s Sheds meant turning to those who experienced and were able to tell about them (Norlyk & Harder, 2010; Van Manen, 1990). So it was the men involved in Men’s Sheds to whom I turned. In-depth interviews were the means by which these men told me of their understandings of social inclusion provided by Men’s Sheds. The men were asked to describe their experiences in the sheds and to tell in their own words the story of participating in Men’s Sheds. Listening to their stories was intended to add depth and breadth to our understanding of the lived experience of social inclusion provided by Men’s Sheds.
5.3.3 Reflecting on Essential Themes which Characterise the Phenomenon

The true reflection on the experience is “a thoughtful reflective grasping of what it is that renders this or that particular experience its special significance” (van Manen, 1990, p. 33). Consequently, in this study, I carefully read and reread of all the participants’ text as well as repeatedly listened to the audiotaped individual interviews in order to make as clear a grasp as possible of their descriptions. I recognised the importance of reflecting on themes that emerged from the interview transcripts. This reductionist approach facilitated the development of essential structures, which formed themes that gave meaning to the phenomena.

5.3.4 Describing the Phenomena – the Art of Writing and Rewriting

As Gadamer (2004) tells us, language brings meanings into the interpretive situation to be heard and understood. Language in this context alludes to what lies hidden in the text. The textual language is understood as being a cogent messenger of meanings. In other words, the central role of language goes beyond the basic use of words in conversation to the writing activity. According to van Manen, hermeneutic research is fundamentally a writing activity. Thus, he pointed out that:

….for hermeneutic phenomenological work, writing is closely fused into the research activity and reflection itself…. Writing fixes thought on paper. It externalises what in some sense is internal; it distances us from our immediate lived involvements with the things of our world… Thus, writing creates the reflective cognitive stance that generally characterizes the theoretic attitude in the social sciences. The object of human science research is essentially a linguistic project: to make some aspect of our lived world, of our lived experience, reflectively understandable and intelligible… to write is to measure the depth of things, as well to come to a sense of one’s own depth (van Manen, 1990, p. 125-127).

I intend to make visible to the reader the feelings and thoughts of men involved in Men’s Sheds regarding the effects of participating in this movement to the extent that I as researcher am able to do this. Chapters are included that outline the events that led to participants to participate in Men’s Sheds (chapter 6), the themes and how they were developed (Chapter 6 and 7), and discussion of these themes together with recommendations for policy and practice (Chapter 7, 9 and 10). It is
worth remembering that this is a non-linear process represented as a linear document.

5.3.5 Maintaining a Strong and Orientated Relation to the Phenomenon

van Manen (1990) acknowledges that it is important to approach the hermeneutic task with integrity and not to settle for superficialities or falsities and to do this by retaining a strong and orientated relationship to the phenomenon under investigation. I was extremely careful not to be sidetracked and remained sensitive to the question: ‘what is the impact of Men’s Sheds on the health of the men involved? In the later stages of the study when the themes seemed to provide some insight I worked again through each transcript to examine whether the data supported the emerging interpretation.

My desire was to produce texts, which present textual themes in concert with the notion of the phenomenon. It was my principal desire that those who read my text would be able to connect with it as a legitimate experience. The text should be read as one that encompasses not only the experience of men involved in Men’s Sheds, but also the way in which it influences how a person relates to the world. Consequently, throughout my research, I remained open to the meanings of Men’s Sheds and their impact on the health and wellbeing of the men involved.

5.3.6 Balancing the Research Context by Considering the Parts and the Whole

Throughout the process of interpretation, I was fully immersed in the hermeneutic circle. I continually moved between the parts and the whole in order to understand how each participant’s story contributed towards developing the whole understandings of the health impacts of social inclusion provided by Men’s Sheds. I did this in two ways. Firstly, the stories that emerged within each research conversation made up each participant’s whole story. Secondly, all together, the stories drawn from the in-depth interviews made up the whole of the research text. Enabling my interpretive movement between these parts and the whole was
facilitated in multiple ways. Questions and answers came from writing interpretively about each participant’s stories, engaging in regular conversation with the supervisory panel and writing about my thinking and new questions in a reflective journal.

Once emerging words and concepts developed from these individual parts, they were then reviewed and interpreted in light of the whole perspective. My task was not to stay with each participant’s subjective experiences of being in their everyday, but to question how the experience impacted on their health and wellbeing. This process was in a constant flow for me throughout this research project. It is important to note that all six steps of van Manen flow one into the other, and backwards into a spiral, with the sixth step burrowing into the first step as one remembers the research question.

5.3.7 Ethical Consideration

Recruitment and subsequent data collection did not occur until after the Human Research Ethics Committee (HREC) at the University of Western Sydney approved the study (Appendix C). Throughout the duration of the study, the following ethical principles were applied: informing participants of their rights which included the right to participate or withdraw from the study without penalty; the level of involvement in the conduct of the study; issues of privacy and data confidentiality; and attainment of informed consent prior to their participation. An information sheet (Appendix A) and an informed consent form (Appendix B) were developed to communicate the objectives and processes of the research to the participants.

All participants were provided with detailed explanations about the study and the procedures used prior to obtaining informed consent and commencing the interview. During the initial telephone conversation and in person before each interview I discussed the aims of the study and the consent process with the potential participants, making it clear that involvement in the research is voluntary and that they are free to withdraw from the research at any time should they so choose. By
signing the informed consent, the participants indicated that they fully understood the nature of their participation and voluntarily agreed to do so.

It was important to maintain the confidentiality of the participants at all times. Any defining information relating to the participants, another person or any institution uncovered during this study was deleted from the transcripts or changed to ensure anonymity. This process was explained to all the participants. More so, to ensure anonymity, participants in this study were provided with the pseudonyms. Any specific information that could potentially identify any participants, for example, wife’s name or place of work, was deleted from transcripts and computer files. I also gave each participant the option to not share any information he was uncomfortable with, thereby reducing any feelings of threat or risk to the participants. Therefore, before conducting formal audiotaped interviews, it was important to develop a good rapport with each participant. Moreover, strategies were put in place to make prompt referrals for professional counselling is distress were to occur and contact details of these services were made available to all the participants.

5.3.8 Purposeful Sampling of Participants

Purposeful sampling techniques were used to select the men to interview. In other words, the participants were selected based on their particular knowledge of the phenomenon. This study focused on exploring and understanding the meaning of social inclusion provided by Men’s Sheds. In order to achieve this intention, I needed to turn to people that were representative of the experience in question. Therefore, to be part of the study, the participants needed to had started their involvement in Men’s Sheds within the last six months. It was desirable that participants have experienced the social inclusion provided by Men’s Sheds within the last six months as a longer period may have made their ability to recall the experience more difficult. Also, a minimum period of at least one-month involvement since joining the shed was desirable, as it was judged that this period was sufficiently long enough for participants to formulate perceptions about social inclusion provided by Men’s Sheds.
Participants were only excluded if they exhibited decline in cognitive function, mentally incapacitated or neurologically impaired as these conditions would impair their ability to recall their experience. The purposive selection of participants was informed by the nature of the research question as well as the philosophical conditions. My aim to gather rich stories of the impact of social inclusion provided by Men’s Sheds on health from those men who had experienced it. This is not to deny the possible benefits of the sheds to men with impaired function, simply that it was beyond the scope of this study to capture their experience.

5.3.9 Participants Numbers

Initially, I planned to recruit 20 men involved in Men’s Sheds. As data collection proceeded, this number of participants proved to be both too ambitious and unnecessary. At the point where I had recruited and interviewed 15 participants, a review of the projected sample size was undertaken. The following considerations were noted: the interviews, thus far, had produced much rich data, and the emergent analysis of the texts interpreting the impact of social inclusion provided by Men’s Sheds had taken shape. In other words, the data reached saturation. With this in mind, I discussed with my supervisory panel and it was agreed there was enough data, and further recruitment could cause the study to be unmanageable within my time constraints.

5.3.10 Recruitment

The participants were recruited for the study from the Men’s Sheds around Sydney and Central Coast areas of NSW. These geographic areas were chosen, as they are easily accessible to me. A list of Men’s Sheds were compiled from sources in the public domain, the internet, Australian Men’s Shed Association (AMSA) and Men’s Health Information and Resource Centre (MHIRC) at the University of Western Sydney. Once identified, a letter was sent to the coordinators of the sheds informing them of the research and asking them to forward an invitation to participate in the
research to any of their members (Appendixes E and F). The invitation to potential participants again described the research and its aim, gave my contact details and invited interested participants to contact me directly.

Once the name and contact details of potential participants were obtained through the sheds coordinators, I made telephone contact with them and screened each person to determine whether they met the inclusion criteria for participation prior to arranging an interview. If the participants expressed an interest in this study, I offered them the opportunity to ask questions regarding the study. All questions were answered professionally, prior to the solicitation, of informed consent. Potential participants were informed that their involvement in the study was entirely voluntary and that they could drop out of the study at any time without penalty or compromising any personal relationship with the researcher or the shed coordinators.

These methods successfully engaged and recruited men who were involved in Men’s Sheds. In hindsight, contact with key people, such as the Executive Officer of the AMSA, MHIRC Project Officer, Men’s Health professionals and shed administrators, proved most useful in providing access to potential participants and was central to the success of recruitment. To ensure this approach worked, I made frequent contact with these individuals to establish good rapport and to ensure they were willing to offer some assistance.

### 5.4 Data Collection Processes and Techniques

*The aim of phenomenology is to transform lived experience into a textual expression*  
(Van Manen, 2001, p. 36).

#### 5.4.1 In-depth Interviews

Data was gathered by way of in-depth interviews with the men involved in Men’s Sheds. The interviews were conducted either in the home of the participant, in the shed or any place convenient for the participant. Epistemologically, I understood the
impact of social inclusion provided by Men’s Sheds on the health of men would “manifest itself in experience” (Gadamer, 2004, p. 57). I believed bringing everyday experiences in Men’s Sheds into language would bring it into the light the hidden phenomenon (Heidegger, 2008). Hence, I sought to garner participants’ stories of participating in the Men’s Sheds by way of hermeneutic interviewing.

I used open-ended interview approach, which involved unstructured questions. Hermeneutic interviewing is interpretive, explains Geanellos, “and not governed by predetermined questions (1999, p.40). In the same regard, Gadamer reminds us “the essence of the question is the opening up and keeping open of possibilities” (2004, p. 266). Using unstructured questions provided an opportunity for me to engage with the participants and encourage fluency and rich disclosure. It was important to allow participants to tell their story in the way they chose themselves.

I sought participative conversation between the participants and myself as an interviewer. That is; we engaged in an in-depth dialogue. I allowed them to discuss their experiences in whichever order they wished. The participants conveyed the meaning of Men’s Sheds in their everyday life. These conversations facilitated the participants’ self-reflection on the influence of Men’s Sheds on their health and wellbeing. My conversations with the participants also evoked their experiences of day-to-day life experiences in the aftermath of paid employment. I asked them one main question: Tell me why Men’s Shed is important to you? Initially, they were hesitant to converse but then when they got immersed in the event; they were able to relate the importance of Men’s Sheds.

Questioning and questioning even further in hermeneutic interviewing enables experiences to be brought into the open (Gadamer, 2004). If the conversation threatened to dry up or become ambiguous, probing was used to encourage flow of conversation. Probing questions help the researcher to gain a more in-depth response as they facilitate elaboration on the issue being discussed (Walker, 2011). I used open-ended questions such as “can you tell me a little more about that? What do you mean, exactly? How did this make you feel? What impact did that have on
your health and general wellbeing? These unstructured, open-ended questions further stimulated the conversation.

During the interview if participants touched on social inclusion or any other health benefit of participating in Men’s Sheds, I encouraged them to talk about these issues in more depth, trying to ascertain how these issues affected their being-in-the-world. Examples of these questions were: ‘I notice, one of the things you said was important for you was the mutual trust and friendship among men in the shed. How did this camaraderie benefit you? Or ‘you stated that every time you were going through some life challenges, you spoke to your mates in the shed. How did this make you feel?’

It was important to encourage the men involved in Men’s Sheds to share their stories and to uncover meanings in their experience. This was in keeping with van Manen’s (1997) suggestion that the role of the researcher in the hermeneutic interview is to keep the interviewee focused on the topic being investigated. I wanted the participants to describe the experience, and wanted to know how they felt, thought and acted in order to give a rich picture of the lived experience of participating in Men’s Sheds and its impact on health (Vandermause & Fleming, 2011). I also brought certain pre-designated conversational topics to the interview context. These were the broad themes of men’s health, stress and social inclusion; and the specific focal points of Men’s Sheds and salutogenesis. However, these were only used as starting and not end points in the interpretive process.

Towards to end of every interview, I afforded each participant the opportunity to add anything to our discussion by asking the following question: ‘Is there anything else would you like to add in relation to your experience that you feel is relevant?’ Before the interview was concluded, I also requested the participants to note in their journal if there was anything else about the meaning of Men’s Sheds that they would have liked to share so that they could tell me in the next meeting. This promoted further reflection on their experiences and prepared them for the next time we met.
If there was a need for a second meeting, I always kept in mind the time that would be required for transcribing the first audiotaped conversation. In addition, I also provided my contact number in case the participants wished to call me before the next meeting. I also concluded each interview by thanking participants for giving their time and for sharing their experiences. The duration of the interviews ranged from 30 minutes to two hours. The interviewing process started in October 2013 and ended in February 2014.

5.4.2 Capturing the Lived Experience

In order to capture the exact words of the conversation as accurately as possible, a portable digital recorder with a built-in microphone and long play was used (Fernandez & Griffiths, 2007). This equipment also had 312 minutes of recording time, which meant that participants could talk without the interruption of cassette tapes or batteries being changed. Use of a digital recorder with these advanced features allows researchers to pay attention to what the participants say, rather than focusing on the time or the reliability of the equipment (Walker, 2011). It also allowed me to listen only without taking notes during the interview, which was less distracting for the participants. I did, however, make notes after each interview to contextualise elements of the interview during data analysis and interpretation. After each interview, the audio recording was transcribed for data analysis.

5.4.3 Organisation of the Data

A growing number of qualitative researchers suggest that the search for concepts of importance and themes begin the moment data collection commences (Bazeley, 2013; Froggatt, 2001; Silverman, 2011, 2013). Before outlining the transcription process, Table 5.1 presents the key abbreviations and conventions used in this study.
Table 5.1 Key abbreviations and conventions

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul</td>
<td>All names of participants are pseudonyms</td>
</tr>
<tr>
<td>LH</td>
<td>Refers to me as interviewer</td>
</tr>
<tr>
<td>[laugh]</td>
<td>My comments concerning incidents or behaviours that occurred during the interviews. As well my comments used to describe people or places named by participants</td>
</tr>
<tr>
<td>... or ....</td>
<td>Is used to indicate dialogue from interviews or field notes that I have edited out</td>
</tr>
<tr>
<td>(p)</td>
<td>Indicates a pause in the dialogue of participants of less than or equal to three seconds</td>
</tr>
<tr>
<td>(P)</td>
<td>Indicates a pause in the dialogue of participants of more than three seconds</td>
</tr>
<tr>
<td>6 Then</td>
<td>Line numbers are provided when the location of dialogue within the interview as a whole is relevant</td>
</tr>
<tr>
<td>I MEAN</td>
<td>Indicates words emphasised or spoken louder by participants during the interviews</td>
</tr>
<tr>
<td>I understand</td>
<td>All dialogue from the interviews is indented</td>
</tr>
<tr>
<td>as in</td>
<td>Indicates a section of dialogue that is of a particular significance and form</td>
</tr>
</tbody>
</table>

Regarding the transcription process, once the interviews were completed, the recorded conversations were played and re-played and reflected upon. They were then transcribed verbatim onto a Microsoft Word document. The following extract is taken from the eighth interview with Joe (Joe_13121108.doc). Interview no: 8

**Participant name: Joe**
Date: 11.12.2013
Time: 16.30 – 17.30
Venue: Men’s Shed office
Audio Length: 60 minutes

LH: *Thank you for participating in this study. To start, Tell me about the reasons why participating in the Men’s Shed is important to you?*
Joe: I suppose there are several things; getting help from friends, finding someone to talk to and having a laugh and forget about my worries. I got sick in '97-98'. I had a heart attack. In 2000 I had a massive stroke. I had to be fixed up again. It took me three years. I couldn’t talk or [say] anything because I was like I went back to be a little kid, a little baby. I had to learn to talk and everything again, so I started to go back and then learn to talk and whatever. In 2002 my wife got breast cancer. So she got sick and we were both sick, but she got breast cancer in '93 first. She got it in '93 and then she got it again 2002 because I got sick 2000, I had a massive stroke and she got the breast cancer back again, 2002. So 2010 I had another stroke. Five weeks later she got the breast cancer back. Five weeks, she got it back again the third time, but she within five weeks she got it again. She’s been two and a half years she’s been going through chemo. She’s still going. We go tomorrow [for chemo therapy], she has it tomorrow, two weeks on, one week off so that’s been three and a half years. So my problem was learning to talk and going through that myself and trying to look after her.

LH: I’m sorry to hear about your situation, I can only imagine how stressful things have been to you and your wife. So how did you end up in the shed?

Joe: My wife found out about the new shed and said why don’t you try it. You are spending most of the time alone when I am having chemo and it is not good for your health. You may have another stroke and...

LH: Wow!

Joe: ...I’m there Monday, Tuesday, Wednesday and Friday, virtually most of the time and I think my wife’s happy about that because I’m out of the house and we’re not arguing about things any more.

LH: [laugh] That’s funny, yeah.

Joe: [laugh] and I enjoy being here, everyone is friendly and supportive.

LH: I notice, one of things you said was important for you and you liked was the friendships in the shed. Can you tell me more about this?

Joe: Oh yes, everyone is very friendly and supportive here. I now have lots of people to talk to. I mean just talking to people, it’s very supporting. Talking - though I suppose before I had the stroke I was very outgoing, yeah, so I had no problem chatting on the internet, talking to people until 2000 I had the stroke. Well now I can’t even turn the bloody computer on, yet I was on the computer all the time so I lost all that type of whatever. They reckon virtually everything overnight it went [just] like that. Here, I’ve got it all back. I just needed a push and I found it here in the shed and my life is back to normal. With the support I get, I now have the energy to help my wife fight the bloody cancer..........

LH: Okay, good. Is there anything else you would like to add in relation to your experience that you feel is relevant?

Joe: I have told you a lot but since you are coming back tomorrow, I will tell you more then. Thank you so much.

LH: I appreciate that your cooperation and attending in this interview.

As I transcribed I often heard things I had not noticed during the interview event. I could hear more questions that were never asked. Some of these I took back to the
participants and some came into my hermeneutic engagement with the written text. Nevertheless, producing verbatim transcripts was primarily a means of taking me to a textual expression of the participants’ lived experience. I chose to transcribe immediately after the interview event while the audio recording was still fresh in my memory. This was helpful especially when the participants’ voices or words sounded unclear on the recorder, and I could still recall what was said and copy the data down accurately. When the interview was transcribed, any identifying characteristics related to either the participants or institutions were removed.

### 5.4.4 Reflexivity Activities

Influenced by Bradbury-Jones (2007), I kept a reflexive journal throughout the research process. I used the journal to record my insights and quandaries, as well as reflections on the study; this was an attempt to capture my subjectivity at work. Keeping a reflexive journal throughout the research process forms part of the audit trail and is advocated by a number of researchers (Bradbury-Jones, 2007; Jasper, 2005; Wolf, 2003). I disciplined myself to keep documenting my pre-understandings, co-created meanings, theoretical and conceptual standpoints continually in an analytic log. Recording my paradigmatic stance was crucial in preparing me “to approach the phenomenon to be investigated with openness and wonder” (Finlay, 2002, p. 536).

During the fieldwork, I also made notes in diary form about the participants. These included their tone of voice, body language, expressed emotions, as well as my own response to their stories and words. The notes I took contained demographic information, the setting and context of each interview; notes on the participants’ appearance; non-verbal communication during the interaction; noteworthy points of the interview event and also captured any information gained throughout in-depth conversation with these men. These field notes contributed to the study’s findings (Sunstein & Chiseri-Strater, 2007). In conjunction with the in-depth interviews and my analytic log, the field notes were used to triangulate the data to increase the validity and credibility of the study.
Notes about each participant were labelled to match the names and interview labels assigned to each participant’s transcript, for example, ‘Adam_13121108.doc.’. The following note is taken from my journal note.

Journal Entry 13/12/13 - When I first arrived in the Shed, the coordinator who I already knew (sic) welcomed me. He quickly introduced me to Adam, a tall 78-year-old Caucasian who was tending a vegetable garden behind the shed. He was expecting me as evidenced by calling me by my name and mentioning the study. His voice was soft, something I had already noticed when I spoke to him on the phone. My first impression of Adam was that he was an intelligent and a very private man. The coordinator offered us a quiet office and coffee before we started the interview. It was a very hot day and I do not like coffee, but I accepted his offer as soon as I heard Adam saying it was his favourite beverage. He had a bit of a smile when I commented about his photo that hung on the wall together with other shedders. After briefly explaining the study again, he said that he had no questions. I turned the audio recorder on and he turned off his mobile phone, cleared his voice and leaned towards the recorder.

In the next section, I describe the procedures used to make sense of the data collected. It was through a combination of Gadamer’s notion of fusion of horizons, van Manen’s reading approaches for thematic analysis, and narrative analysis that I arrived at an understanding of the impact of social inclusion provided by Men’s Sheds on the health of the men involved.

5.5 Data Analysis Process

Once the transcription of interviews was completed, I was faced with the decision on how to analyse the participants’ stories. Data analysis was neither an isolated and separate activity nor a set of rigid procedures. Rather, it was a “free act of ‘seeing’ and search for what is universal, the general meaning, from the particular, in relation to a specific person or situation” (van Manen, 1990; p.79). Data analysis was very much a circular process and flowed in line with my encounters with the text and the study participants (Minichiello, Aroni, & Hays, 2008). It was for this reason that the process moved away from the application of coding in order to elicit meanings of being socially included in the sheds from a hermeneutic perspective (Langdridge, 2007).
Interpretation of data came from being in conversation with the whole research text and thinking about the things that showed in the text-as-data (Fleming, 2001). The texts-as-data included the interview transcripts and my field and working analytic notes. These texts assisted me to reflect deeply how social inclusion provided by Men’s Sheds showed itself in the everyday lives of the men. Therefore, my interpretations of the data formed understandings of what was brought into light by the text-as-data. Each transcribed text showed through as rich illustrations of each notion (Jasper, 2004). Together these understandings formed meanings of being socially included in the sheds.

In this section, I describe how this process was undertaken from a preliminary descriptive analysis of the text through the components of the analytical process to the representation of the themes that emerged from the interview transcriptions. The steps and processes used to make sense of the data from the works of Gadamer (2004) and van Manen (1990) are explicated. I also explain how I applied narrative analysis further to understand meanings of social inclusion provided by Men’s Sheds.

5.5.1 Thematic Analysis

In order to achieve a deep understanding of the impact of social inclusion provided by Men’s Sheds on the health and wellbeing of the men involved, I subjected text-as-data to thematic content analysis, which was informed by the works of Gadamer (2004) and van Manen (1990). Thematic analysis has been defined as the search for themes that emerge as being important to the description of the phenomenon (Fereday & Muir-Cochrane, 2008). The process involves “careful reading and re-reading of the data” (Rice & Ezzy, 1999, p. 258). It was through reading and re-reading of the data that I recovered recurrent themes that were “embodied and dramatised in the evolving meanings and imagery of the work” (van Manen, 1990, p. 78). I use the term theme (Bazeley, 2013) to describe an integrating and relational statement that identifies both content and meanings of being socially included in the sheds.
In order to isolate these themes, I employed the “wholistic,” “selective” and “detailed” approaches as illustrated by van Manen (1997, p. 94). In wholistic approach, also known as *sententious* approach, I examined the interview text as a whole and endeavoured to capture its fundamental meaning. In the selective or highlighting approach, I read the transcript text several times, in the process asking what each statement or phrase stood out to reveal and highlighted these to represent the themes of the impact of social inclusion provided by Men’s Sheds. Finally, I used a detailed or line-by-line approach, whereby I analysed every sentence or sentence cluster to determine what it said about the experience of social inclusion provided by the sheds. I now explain how this process transpired.

5.5.2 Wholistic Approach

In this first step of the data analysis, I repeatedly read and engaged all the texts included in interview transcripts, field and analytical notes in order to gain a sense of the overall experience of each participant. I deliberately treated the data as a whole and proceeded to search the parts for patterns in ideas and thoughts that were expressed by the participants. I made notes about key ideas in the margins. I was eagerly looking for points of similarity, as well as differences, between each participant’s interpretations of the social inclusion provided by Men’s Sheds.

I realised a number of the men shared similar experiences of life in their quest for social inclusion in the sheds, and this was concerned with experiences of social isolation, loneliness and ultimately coping with stress. I found the core meaning of social inclusion provided by the sheds emerging through this process. This core meaning of social inclusion provided by the sheds was an important representation of the data in this study. However, this is not to suggest that the core meaning was formed in totality at this point and that themes and sub-themes were then derived from this core. Rather, the development of concepts, sub-themes, and themes was not a linear but a cyclical process. Therefore, this approach was crucial in bringing to
light the core meaning of the phenomenon by examining the parts and considering them in totality.

5.5.3 Selective Approach

Are there phrases that stand out? Can we select some sentences or part sentences that seem to be thematic of the experience?  

Van Manen (1990, p.94)

The second step involved analysing each interview transcript separately, moving from the parts; that is, the participants’ stories, to the whole picture of the phenomenon. The interview transcripts were read, and reread and statements or phrases that seem particularly important or revealing about the health impacts of social inclusion provided by Men’s Sheds were highlighted. These highlighted statements were then copied and transferred onto separate computer spreadsheets. This was done to make it easy to compare these individual units of data with the original text and also to observe the context in which it was said.

Once this process was completed for all the transcriptions, the highlighted units became linked to keywords in order to formulate dominant meanings of social inclusion provided by sheds in the lifeworld of the men involved and explore essential qualities of described experiences. This process continued until all data were classified. The dominant meanings were then grouped into similar topics to reflect sub-themes. In the final analysis, sub-themes were grouped to identify themes.

To exemplify the process of the selective approach, I will illustrate how the dominant meaning of being socially included in Men’s Sheds in the lifeworld of men emerged in the data from an interview with Luke. It should, therefore, be possible for the reader to audit the decisions I made throughout the analytic process (Grbich, 2012). Highlighted statements and phrases that were copied and transferred onto computer spreadsheets were shown in bold. Luke explained to me:
Luke: Before I joined the shed, I used to worry heaps - I suppose, I had mild depression. I used to worry about things that I couldn't do anything about. You know, when you've got family involved, and that, it can be stressful. So I used to try and manage things the best way I can. Eventually, issues took a toll on my health until I joined the shed. The blokes are very supportive here, I feel free to talk about issues that bother me, you know when old men are together - they like talking about their prostate and support each other. Yeah, most of us have the same problem, and we like to discuss it and be there for each other. I recently had a big health scare, and because I knew the blokes will listen to me, I shared it with them. That was therapeutic, I felt a huge sense of relief when I realised everyone cared for me. I did not feel lonely anymore. It was a good feeling that made me strong. For me it is when I know that someone is listening to me and valuing me as a human being, I am able to overcome any hurdle; it makes me feel good and happy about life; you know what I mean? We are always there for each other. Maybe he's on something that I'm not on, and I could find out whether that's me. When you're jumping up and down out of bed all night to go to the toilet...

Further examples of these individual units from interview transcripts are shown below from two participants, George and Mike.

George: I had bypass surgery in 2012 again. Before that in 2001 and 2009 and 2010 I had stents. I developed diabetes in 1995 and I take insulin and other tablets for the diabetes plus for cholesterol as well as hypertension because they want to get my heartbeat more regular, otherwise the heartbeat goes too high. So I've also had spinal bone fusion of C3 and C4 I probably need to do another one C4, C5 to be fused as well that might be next year. It's hard dealing with these health problems when you are lonely. Coming here has provided me with friends who are always there for me and this has made me stronger and resilient to any pressure. A month ago I was feeling very sick and lying helplessly on my hospital bed when two guys from the shed came to visit. Their visit made a huge difference to my pain and when they read me messages from other shedders I instantly felt better, Believe you me, my blood pressure came down and the doctors were happy with me going home the following day [laughing]. So yes, I am in and out of hospital but coming to the shed makes me approach life from the positive. The support is great here. I need this because I'm going back to the hospital next year.

Mike: Well there are a couple of reasons why I like coming here, the first one is to socialise then talking to people and the camaraderie. I want to tell you an interesting story, which happened to me in the shed last week. You know it’s towards Christmas and everyone is getting gifts to please their loved ones. I came to the shed as usual and then one guy came straight to me and gave me a small computer [laptop] and said “Merry Christmas!” I couldn’t believe myself because I told him my son sells computers, he said “give it to your son to sell it
for you and you have good money for Christmas”. Imagine, just like that! I had a nagging headache that morning, which often happens when I am stressed – could you believe it if I tell you that after receiving the gift, it disappeared and I felt better. It was because I had always been worried where was I going to get money to buy my grandchildren Christmas presents and it got to a point where I was stressed. You see, because I shared my problems with another bloke, I think he told [name removed], hence this gift. This is not an isolated case, blokes do support each other emotionally and materially here. I have been given workshop tools before, so to me coming here is important. I also like coming here because I can talk to other men and share problems. Before joining the shed, I used to bottle all my problems because I had no one to talk to; I believe this contributed to my illness.

Table 5.2 is a sample of the computer spreadsheet that illustrates how the interpretative concepts that emerged from the various statements or phrases that were essential in the participants’ stories were tabulated. Interpretive concepts are written in the third column. An essential means by which understandings of the health impacts of Men’s Sheds entered into the interpretive process was through continually aggregating keywords and concepts from all the participants’ transcripts. The progression of the analysis from describing the lived experience to analysing it then involved pooling all the key words and concepts to look for sub-themes and then themes. This process was informed by the work of Gadamer and van Manen (1990), with their ideas moving from the parts to the whole and also the fusion of horizons and the hermeneutic circle. Speziale, Streubert and Carpenter (2011) also provided useful advice as relates to highlighting key words and ideas, which facilitated the identification of patterns of meaningful connections.

5.5.4 Detailed Approach

I also used van Manen’s detailed approach to look at every transcribed sentence or cluster of sentences, while asking the question “what is this person saying and how can these ideas be understood in meaningful ways or be encapsulated to reflected their major concerns?” van Manen (1990, p. 93). This involved examining all stories and descriptions that the men provided and then assigning key words and concepts to these sentences.
Table 5.2 Moving from text to concept in thematic analysis process

<table>
<thead>
<tr>
<th>Words of participants</th>
<th>Key words</th>
<th>Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>I recently had a big health scare and because I knew the blokes will listen to me, I...</td>
<td>When I know that someone is listening to me and valuing me as a human...</td>
<td>Being valued</td>
</tr>
<tr>
<td></td>
<td>this has made me stronger and resilient to any pressure. A month ago I was...</td>
<td>Being strong</td>
</tr>
<tr>
<td></td>
<td>I instantly felt better...</td>
<td>Being resilient</td>
</tr>
<tr>
<td></td>
<td>my blood pressure came down and the doctors were happy with me going home...</td>
<td>Being healed</td>
</tr>
<tr>
<td>It’s hard dealing with these health problems when you are lonely. Coming here has...</td>
<td></td>
<td>Feeling better</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being connected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being listened</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being understood</td>
</tr>
</tbody>
</table>

The tables below provide examples of how I managed the analytical process. They illustrate how the core impact of Men’s Sheds on the health of the men involved, which will be discussed in Chapter Six, emerged from two themes, being-valued-in-an-everyday-world and being able to recover readily from life’s adversities. Table 5.3 demonstrates how the first theme ‘being-valued-in-an-everyday-world’ developed from two sub-themes of the awareness of self, being valued and recognised. Table 5.4 illustrates how the second theme ‘being able to recover readily from life’s adversities’ developed from two sub-themes of dealing with threats and being resilient.
I have been retired since 2000 [thirteen years before joining the shed]...Ever since, I felt different because no one seemed to care or value me or even for the little things I did for the community. It seemed perfectly normal to me that once you retire no one cares about you except if you are lucky to have a supportive family or friends...It was not until I joined the Men’ Shed. I felt human again; all of a sudden there were mates who cared to ask me how I was and how my health was? I now understand I am a capable human being who is valued everyday. This gives me hope for the days ahead. (Mike, 75)

When I came to the shed, it became clear to me that I was not a social outcast. The same day I joined the shed, I was allowed to do anything I liked with the tools. Unfortunately I hadn’t made a dovetail joint for over 50 years and my work was a mess. But I realised that no one was judgemental, instead they were all in full praise of my efforts...I understood, as a shedder, I was not different from other men when they come to the shed and that raised my spirits. (Adam, 79)

I was leading into a new awareness of my likeness. I just knew that I am belonging to a group of supportive friends. They kept telling me that I am a valued member of the group and I keep feeling being part of this wonderful group shelter me from the negative aspects of life. (Paul, 69)

There is mutual respect amongst the blokes and I always feel my opinions are valued and respected that makes me to be part of the group. (Ron, 74)

<table>
<thead>
<tr>
<th>Words of participants</th>
<th>Key words</th>
<th>Concept</th>
<th>Sub-theme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have been retired since 2000 [thirteen years before joining the shed]...Ever since, I felt different because no one seemed to care or value me or even for the little things I did for the community. It seemed perfectly normal to me that once you retire no one cares about you except if you are lucky to have a supportive family or friends...It was not until I joined the Men’ Shed. I felt human again; all of a sudden there were mates who cared to ask me how I was and how my health was? I now understand I am a capable human being who is valued everyday. This gives me hope for the days ahead. (Mike, 75)</td>
<td>Being valued in an everyday-world</td>
<td>New awareness</td>
<td>The awareness of self</td>
<td>Being valued in an everyday-world</td>
</tr>
<tr>
<td>When I came to the shed, it became clear to me that I was not a social outcast. The same day I joined the shed, I was allowed to do anything I liked with the tools. Unfortunately I hadn’t made a dovetail joint for over 50 years and my work was a mess. But I realised that no one was judgemental, instead they were all in full praise of my efforts...I understood, as a shedder, I was not different from other men when they come to the shed and that raised my spirits. (Adam, 79)</td>
<td>Being valued and appreciated</td>
<td>Being valued and appreciated</td>
<td>Being identified</td>
<td>Being valued</td>
</tr>
<tr>
<td>I was leading into a new awareness of my likeness. I just knew that I am belonging to a group of supportive friends. They kept telling me that I am a valued member of the group and I keep feeling being part of this wonderful group shelter me from the negative aspects of life. (Paul, 69)</td>
<td>Self-awareness</td>
<td>Being-valued</td>
<td>Being part of</td>
<td>Being valued</td>
</tr>
<tr>
<td>There is mutual respect amongst the blokes and I always feel my opinions are valued and respected that makes me to be part of the group. (Ron, 74)</td>
<td>Being respected</td>
<td>Being respected</td>
<td>Belonging</td>
<td>Being valued</td>
</tr>
</tbody>
</table>
Table 5.4: Being able to recover readily from life’s adversities

<table>
<thead>
<tr>
<th>Words of Participants</th>
<th>Key words</th>
<th>Concept</th>
<th>Sub-theme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know we [human beings] are all the same. We need to know that we are cared for and supported by others if we are to successfully deal with life problems and for me it is connecting with other men here that I have been able to keep on moving and overcoming challenges (Charlie, 72)</td>
<td>Connecting with other men keeps me moving and overcoming challenges</td>
<td>Connecting keeps me moving on and dealing with challenges.</td>
<td>Dealing with threats</td>
<td>Being able to recover readily from life’s adversities</td>
</tr>
<tr>
<td>Stress has a major impact in the daily life of a man. When thinking of providing for your family when you are old and do not have a job, this is when the support from other men in the shed becomes a very important source of strength to overcome worries (Joe, 67)</td>
<td>Support from other men is an important source of strength to overcome worries</td>
<td>Harnessing inner strength to overcome worries</td>
<td>Dealing with threats</td>
<td>Being able to recover readily from life’s adversities</td>
</tr>
<tr>
<td>For me it is when I know that some one is listening to me and valuing me as a human being, I am able to overcome any huddle; it makes me feel good and happy about life; you know what I mean? We are always there for each other here and one of the lessons for me has been learning to deal with the negatives (Stan, 54)</td>
<td>When I know that some one is listening to me and valuing me/ I overcome any huddle/ deal with the negatives.</td>
<td>Adapting to adversity</td>
<td>Dealing with threats</td>
<td>Being able to recover readily from life’s adversities</td>
</tr>
<tr>
<td>Coming here has provided me with friends who are always there for me and this has made me stronger and resilient to any pressure than before when I used to worry over things and end up sick (George, 68)</td>
<td>I’m strong and resilient</td>
<td>Protection from various health conditions</td>
<td>Being resilient</td>
<td>Being resilient</td>
</tr>
<tr>
<td>I also like coming here because I can talk to other men and share problems. I seem to solve many life challenges and even recover from colds and flue faster now. Before joining the shed, I used to bottle all my problems because I had no one to talk to; I believe this contributed to my illness. (Mike, 75)</td>
<td>Connections provide a springboard during tough moments</td>
<td>Resilience to face adversity</td>
<td>Being resilient</td>
<td>Being resilient</td>
</tr>
<tr>
<td>Connecting with other members in good and bad times provides a springboard during tough moments (Eric, 82)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Through the use of these three approaches, I identified and developed themes describing the impact of social inclusion provided by Men’s Sheds on the health of the men involved. I was able to allow projections about the whole to surface from the parts. The need to remain in the hermeneutic circle is the reason I circled back and forth from the original texts to the data sets. Consequently, this culminated in the aggregation of keywords and concepts from all the participants’ transcripts. With these concepts, I began to discern the sub-themes, which emerged and fused them with my own pre-understandings to produce the themes.

This process of interpretation allowed me to immerse myself deeply in the data. Therefore, what is reported here is an interpretation based on the fusion of horizons (Gadamer, 2004), my horizons and those of the participants. The text-as-data were also subjected to narrative analysis as much of the stories were produced in narrative form and I treated these data as a whole (Fleming, 2001). Narrative analysis built upon and expanded the themes identified during thematic analysis and I found this helpful to understand the meaning and purpose of Men’s Sheds in the lifeworlds of the men involved. I will now outline my use of narrative analytical techniques.

5.5.5 Narrative Analysis

In Gadamer’s hermeneutics, understanding is “always an ‘effect’ of history, while hermeneutical ‘consciousness’ is itself that mode of being that is conscious of its own historical ‘being effected’- it is ‘historically-effected’” (Malpas, 2013a). This means Gadamer believed that people are constantly engaged in an ongoing hermeneutic conversation with history and tradition. A conversation has a narrative element, and “the narratives of the wider historio-social discourses influence and often permeate individual narratives” (Riessman, 1993, p.65). A discussion with men about the impact of social inclusion provided by Men’s Sheds on their health was partly influenced by and contained some reference to the wider historio-societal discourses. Therefore, text as data were further subjected to narrative analysis as some of the data was produced in narrative form.
Narrative analysis focuses on “the ways in which people make and use stories to interpret the world” (Lawler, 2002, p.242). These stories or what Riessman refer to as “first-person accounts by respondents of their experience” (1993, p. 1), help us learn to understand ourselves, and act as windows into the life experiences and viewpoints of others. For my research, narratives were an entry point for examining the role experience has on men’s social world (in the sheds) and how those experiences affected their health and wellbeing. The experience of being socially included in Men’s Sheds is socially complex. In listening to the men’s stories, the social complexity intensified in the intersections between their perceptions of their social-selves and their milieu.

Men’s experiences of unemployment, retirement, deaths of loved ones, and changes within the family structure, and the lack of a stronger social network were socially complex and often brought social tensions in their everyday lives. In other words, there was always a sequence of events chronicled by these men, which either led to social tensions or to personal victory. Further subjecting these stories to narrative analysis built upon and expanded the themes identified during thematic analysis to show their consequences in the everyday lives of the men. Narrative inquiry is characterized by “sequence and consequence” (Riessman & Speedy, 2007, p.430). I was called to pay attention to the particulars along with their context (Riessman, 2008; Zilber, Tuval-Mashiach, & Lieblich, 2008). This process required a willingness to enter the narrator’s world with care and was used in this study to further understand the phenomena at hand.

Although no new themes were developed, analysing content and form of their self-narratives allowed me to learn about their resilience and understandings of Men’s Sheds, which built on the two themes, **being-valued-in-an-everyday-world** and **being able to recover readily from life’s adversities**. Thus, narrative analysis facilitated the expansion of hermeneutic data by adding depth to the content. Below I describe how I applied the narrative analysis. It is important to note that a detailed description of narrative inquiry is beyond the scope of this thesis. I only draw on the
work of Labov (1972), Riessman (1993) and Gubrium and Holstein (2009) among others to demonstrate how I used it as a tool of analysis.

5.5.6 Identification of Narratives Within the Words of Participants

The evaluation model of Labov (1972) was useful for me as a means of identifying simple narratives within the dialogue-as-text. Labov’s model has gained popularity in narrative analysis and is often used by investigators seeking to identify narratives within dialogue-as-text (see, for example, Cortazzi, 2014; De Fina & Georgakopoulou, 2011; Esin & Frost, 2011; Hampton, 2004; Nicolopoulou, 2008; Patterson, 2008; Patterson, 2013; Tokunaga, 2013). In fact it has been observed that the Labov evaluation model “is not only cited in every text concerned with narrative structure, it is also actively drawn on and used, with little if any modifications, in current work analyzing narrative structure in a very wide range of context” (Holmes, 1997, p. 91).

Labov describes “narratives of personal experience” that recount past events in a typical structure that includes a beginning, middle and end (1972, p. 354). By considering evaluation of experiences in narratives, we are able to convey the meanings that this experience has for the narrator (Cortazzi, 2014; Labov, 1972).

The Labov evaluation model, a fully-formed oral narrative follows six stages - an abstract, which is optional as is often included in the interview question; an orientation that contains background information relevant to understanding the narrative; complicating action that provides the content and sequence of events in the narrative; evaluation which exemplifies why the narrative was told and the point of the story; a result or resolution that describes the outcome or what finally occurred; and a coda which is also optional and when evident provides closure and returns the listener to the present (adapted from Cortazzi (Cortazzi & Jin, 2000) and Jin, 2000; Labov, 1972). The Paul is 70 years old, married man with a son and daughter, and lives in his own home with his wife. He worked as a cabinetmaker and then as a maintenance carpenter in a career spanning 45 years. He retired when he was 65 years old. Subsequently, Paul lived a stressful life after he lost his savings and he ended up suffering a heart attack. He had no friends and most of them had either died or moved interstate. Two years later, he joined the local Men’s Shed that he attends regular. He teaches other blokes carpentry and describes the shed as a very supportive environment.
following is an exemplar demonstrating how I applied the evaluation model to identify narrative within the dialogue-as-text:

*LH:* Is there anything more you could tell me about being involved in the shed?
*Paul:* [Paul tells me more about experience of being involved in the sheds and then refers to a series of related events]

**Abstract**

*Paul:* (p) *Well, coming to the shed has improved my general health.*

**Orientation**

(p) *Before I came here, I was always worrying about things, many of which I couldn’t change and often I ….*

**Complication**

...ended up in hospital where I was once forced to wear diapers because I was too sick to walk to the bathroom. I could hardly bear such indignity...

*LH:* mm

*Paul:* ...and it was painful to see my wife struggling to look after me when I was discharged from the hospital, as we did not have any form of support. That ate me up from the inside. It sapped my energy, but...

**Result**

...when I came to the shed, I met a lot of supportive friends and ...

**Evaluation**

*Paul:* knowing that I belong to a group of supportive friends is sufficient for me. It gives me the strength to deal with issues I never would have dealt with before.

*LH:* What gives you that arsenal?

*Paul:* Knowing that I belong to a group of supportive friends makes me happy and I do not worry about a lot of things as I used to. This is the reason I joined the shed, solely for the companionship.

**Coda**

(P) Yes, it has been a great benefit to me, and if it hadn’t been I would have died if it weren’t for the companionship in the shed.

A fundamental characteristic of narrative, as indicated above, is what is called in the literature a “genre”. The main purpose of a genre is to engage the reader in an imaginative experience (Herman & Vervaeck, 2005). Typical examples of genre of narratives include hypothetical stories, which describes events that did not occur, habitual narratives that refer to actual events that have recurred repeatedly and topic centred narrative account, which links events along thematic lines (e.g. Paul’s narrative above) (adapted from Riessman, 1993, p. 18). In this study, different participants told their stories using different genres of narratives. This is because
“people tell their own unique stories, but they compose these stories by adapting and combining narrative type” (Frank, 2013, p.75).

5.5.7 Process of Narrative Analysis

As a starting point, I read the full interview text several times within an extended timeframe (several weeks) to grasp its content (Cortazzi, 2014). This was a useful step in the identification of all narratives as well as the narrative practices used by the participants to tell their stories. Indeed, this provided a framework that enabled me to see how the participants put their stories together to convey meanings in their lifeworlds. I used the analytical framework offered by Gubrium and Holstein (2009) to analyse the narrative practices of the participants in this study. Table 5.6 provides a glossary of the narrative practices used in this study.

Gubrium and Holstein (2009)’s framework involves investigating the “relation between [the] ‘hows’ and ‘whats’” of the storytelling (Gubrium & Holstein, 2009, p. 164). Specifically, it involves aspects of narrative practice, composition, and control and calls for the interpreter to identify the ‘whats’, that is narrative resources. In my study, these resources included narrative auspices and discursive formations such as social cultural norms and understandings which people draw upon to create identities and narratives by which to perform these identities (Gubrium & Holstein, 2009; Phoenix & Sparkes, 2009).

The ‘hows’ of storytelling included the narrative linkages used by the participants in this study to assemble the parts and particulars of events and interpretations into broader understandings of the health impacts of participation in Men’s Sheds. The participants used narrative footings to establish and change positionality in their stories. There were also occasions when participants used narrative slippage to produce a typology of the stories and then discuss the implications of the

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8 Narrative practices “characterize simultaneously the activities of storytelling, the resources used to tell stories, and the auspices under which stories are told” (Gubrium & Holstein, 1998, p. 164).
classificatory process (Reedy, 2012). For instance, different participants in this study adopted and modified the reasons for participating in Men’s Sheds, to produce their own unique narratives.

Table 5.6 Glossary of Narrative Practices

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discursive formation</td>
<td>Describes groups of statements, which may have any order, correlation, position, or function as determined by this disunity.</td>
</tr>
<tr>
<td>Episodic narrative</td>
<td>A story that is told through a series of episodes, or segments</td>
</tr>
<tr>
<td>Narrative Aupices</td>
<td>Discursive mandates and constraints particular to the setting and group that conditions and mediates narrative production.</td>
</tr>
<tr>
<td>Narrative control</td>
<td>Refers to the control by ‘institutionalised storytelling circumstances or formal relations between interacting parties’</td>
</tr>
<tr>
<td>Narrative footing</td>
<td>Couch the story within the local context and allude to what is possible to relate within a culture thereby providing the listener with information about the perspective that a storyteller is going to take on the material</td>
</tr>
<tr>
<td>Habitual narrative</td>
<td>Narratives where events repeat with no obvious peak</td>
</tr>
<tr>
<td>Narrative resources</td>
<td>The resources used to tell stories, and the auspices under which stories are told</td>
</tr>
<tr>
<td>Narrative linkage</td>
<td>Involves weaving threads of coherence into stories that unify biographical particulars and situational considerations. Narrators link present narratives to past and anticipated future ones, for example, to establish or maintain a consistent, desired self-present.</td>
</tr>
<tr>
<td>Narrative slippage</td>
<td>The differential application of culturally shared meanings in constructing narratives</td>
</tr>
<tr>
<td>Narrative Options</td>
<td>Describes how potential story lines are built into narratives, giving authors and audiences opportunities to accommodate the contingencies of narration.</td>
</tr>
</tbody>
</table>

Source: (Gubrium & Holstein, 2009; Holstein & Gubrium, 2000; Merrill, 2007)

The participants also used the ‘hows’ through narrative editing and substantive monitoring to monitor, manage, modify, and revise their stories to keep them ‘on track’. The ‘hows’ of storytelling also ensured that the subject matter at hand was both relevant and acceptable in the interview context. What follows is part of the interview I conducted with Adam, and I use it as an exemplar of how I applied this framework. In this elucidation, the practical aspects of Adam’s storytelling are identified. Adam began by using narrative resources from his life after retirement to tell me about his challenges:
LH: Okay. Thank you very much Adam for allowing me to come and talk to you about Men’s Sheds. I would like to start by asking you why the shed is important to you.

Adam: I need the shed for companionship. If I didn’t come here, I would be cabbage or dead by now. Retirement has its challenges mate. Since leaving work, I lost contact with lots of friends as most have since moved interstate and some have died. It has been a struggle for me but I have always known that I function well in a group of blokes. I tried joining other local clubs...no they were not for me. I like it here. The most important thing about coming here is that I get to talk to other men and I feel I am part of a social network again.

LH: Okay

Adam: I’ve got nothing better to do than come here. I just live close by. People are friendly here. There are no problems. I like it. I wash the teacups. Put the kettle on in the morning. Get the coffee and the tea. What do you want more? Put the paper rolls up in the toilet. Keep it cleaned up a bit. Doesn’t hurt. The most important thing is companionship. As I said, if I didn’t come here, I would be dead by now.

LH: Okay

Adam then changed the narrative footing to link companionship in the shed to his health in view of his past stressful experiences characterised by migration, financial hardships and loss of loved ones. Adam through narrative slippage pointed out to the ways in which participating in the shed was a strategy to self-provide with social support with a discursive formation of how this impacted on his health and wellbeing with the coda, “...I feel coming here has helped with my recovery from depression and I am happy with my progress.” Adam throughout the interview used forms of this statement to delve into his history and then back to present and hand narrative control back to me:

Adam: Before I came to Australia I sold bread in the country. It was quite a lot of hard work with little pay, and then we came here with no English. I had no money, either, because I had to pay for the fare. We came here, we got married after three months, you know. Started a family, started a home. We struggled along. I lost my daughter. I lost a cousin in war. I lost an aunty and two cousins. Two of my best friends from
young also died. Yeah...I’ve lost friends around here too and it has been a very hard life without most of these people. The more I think about these things, the more I get stressed and that’s how I got depressed. I need the shed....

LH: mm

Adam: …participating in the shed is my strategy for support when dealing with stressful situations. If I didn’t come here I’ll be dead by now. I feel coming here has helped with my recovery from depression and I am happy with my progress.

Adam, through narrative editing and changes in narrative footing, described the health impacts of the shed across interconnected dimensions that work at the psychological level. His use of narrative resources included an everyday understanding of the importance of social support in propping up one’s self-esteem and sense of purpose. At the end of this section he provided a coda and returned narrative control of the interview to me:

Adam: …and having friends around me makes me strong and confident to plan my life and deal with issues.

LH: Mm.

Adam: It could be small family problems or big health issues, I feel I have the confidence to want to push it over and keep on with my life. Let me tell you something. [Two months ago] I had back surgery to fix a prolapsed disk, and my heart played up a bit, but I was able to recover faster than I did three years ago. If you ask me why, I’ll say before coming to the shed, I lacked confidence and was always depressed. I feel coming here has helped with my recovery from depression and I am happy with my progress.

LH: Mm.

Adam: One thing I have learnt, probably a bit late in life, is recognising that everyone is different and that every person has value in his or her own right. I now make an effort to accept myself the way I am. I used to worry about lots of things, why don’t I have money why am I not a pilot? Things like that worsened my depression. Now I am satisfied with myself. This is the reason I like making tea and cleaning the toilets as everyone likes me for that and it makes me happy. I feel coming here has helped with my recovery from depression and I am happy with my progress.

I then asked Adam to tell me more about life before joining the shed. He spoke about the ‘unfavourable environment outside the shed’, the social and economic hardships, especially after retirement and finished with the following coda and returned narrative control to me:

Adam: Retirement brought with it all the stressful experiences, without money and workmates who would want to value and respect an old man?

I then asked Adam about the shed activities that he is involved in and he talked at length about looking after the orchard and the garden, making tea for his mates,
cleaning the workshop and sometimes making wooden toys. When he talked about cleaning the workshop Adam described the many number of times he has to sweep the shavings and saw dust off the floor and walk several times to throw away rubbish, assembling related experiences that he evaluated as maximising his physical strength and fitness compared to before he came to the shed:

Adam: I was a loner who preferred to sit around the television all day. I did not exercise hence I gained all this weight [pointing to his belly]. I thought of joining a local gym and when I went there I found it intimidating with all the muscular young men throwing heavy weights around and young ladies clad in very tight fitting shorts and bras [laughing], I did not belong there! My granddaughter suggested that we adopt a small dog and walk it everyday but I was not interested. I am not a dog person, I love cats, but they are hopeless outdoors.

LH: Yeah.

Adam: I said to my wife maybe we should walk everyday and we only did it for a week and no one told the other to stop and the result is this baby called fat that is now in my stomach [laughing]

LH: [laughing].

Adam: ...but with this running up and down emptying bins and bending and crouching under the tables now and again, I have lost some kilos and I am happy with it. Even the doctor said my cholesterol level is good. So you see, while I may not be in a gym pumping weights or running on those fast moving machines, I am still exercising and improving my health. I feel good.

Adam continued to describe the activities he is involved in the shed and then told me of his love of green spaces hence his involvement in the shed orchard and the garden, linking this to a habitual narrative. Again Adam finished by returning narrative control to me:

Adam: I’m also a nature person; the more green the space, the more I respond better to life challenges, either by not getting stressed at all or by coping better when I am under stress [showing me photos on his mobile phone of him standing in various positions within the shed garden].

LH: Wow.

Adam: You haven’t seen anything; I have a lot of similar photos at home, but they are not only from the shed, they are from different parks and woodlands around the country.

LH: Yeah.

Adam: They go back to my youthful years, when I was studying for examinations at school, I would go to the park to read and memorise everything, and, then came examination time, I would pass with flying colours. Even when I had something that troubled me, going to the bushes made me feel better. Let me tell you one secret of mine, when [wife] gives me a hard time, I simple think about the evergreen garden in the shed and then I quickly escape the talkative wife and go to the shed [laughing], I hope this is not going on the tube [YouTube]. Right? [Laughing]

LH: No, there is no video camera here; nothing is going on YouTube, I promise [laughing].
I then moved the focus to Adam’s experiences of social support in general. Adam replied that as a migrant, he would not have survived if he did not belong to a group of supportive mates, be it at work, in the pub or in motoring clubs. He linked dwindling friendships after retirement to his poor health. He then linked his recent improvement in physical and mental health to support in the shed. As his response continued he compared himself with a ‘small animal’, and the other men in the shed as a ‘tightly knit colony of animals cooperating for survival’. This part of the interview revealed how Adam monitored his story to include relevant subject matter according to the auspices of the interview situation. These auspices included the focus of the interview and his understanding of the benefits to health of living cooperatively with others especially after retirement.

Adam: Before I came to the shed I was like a small wildebeest living in isolation and I see each man [shed participant] as a small wildebeest. Now in the shed all the small wildebeests have come together in a group in order to confront life challenges together. You said you come from Africa, you understand how a group of wildebeests can team against a lion...right?

LH: I get you.

Adam: I interact with people who value me as equal to them and I find that I have opened up a lot and shared my personal experiences with lots of friends. In turn they have shared a lot of their stories and I learn a lot from them. When similar problems come to me, I can handle them because I have the knowledge from other blokes. Interacting with other men make me feel rich.

LH: Mm.

Adam: Although I am [a] small animal but I feel interacting with other small animals makes us a strong colony of animals in quest for survival.

LH: Yeah

As the interview went on, Adam selected other experiences to convey his understandings of the health impacts of belonging to Men’s Shed. He recounted how he now felt more relaxed than before joining the shed. Adam grounded this with a linkage to the following episodic narrative:

Adam: Different health professionals and life coaches visit the shed to talk about different issues. Recently [the shed coordinator], invited a representative from a local health promotion organisation to talk about yoga for pensioners. I liked her talk and I registered my interest in attending the yoga sessions. I have been attending yoga classes for 3 weeks now and I love it. I feel very relaxed and refreshed after every session.
As the interview continued Adam changed narrative footing to compare himself with an old animal, “Of course I am better as compared to some old animals that prefer to continue living in isolation” Adam identified some of the men of his age who prefer to be loners to be always anxious and depressed and having relationship breakdowns. At this point, Adam assumed narrative control by asking me, “if you turn that phone [recorder] off, I’ll tell you a story.” I did so, and he told me a story about a man who runs the local pub who prefers to be a loner. On resumption of recording I gave Adam the opportunity to add anything else to his interpretation of the impact of Men’s Shed on his health. Adam replied that it is important to “GET SOCIAIlY CONNECTED”, THINK POSITIVE or else DEPRESSION will connect with you and SUICIDE shock your loved ones” Again Adam linked this to the narrative resource of ‘companionship’ in the sheds as a means to manage his story and interpret meanings. Adam began with this habitual narrative:

Adam: It is common for most men of my age to feel like old rubbish especially after retirement and loss of our loved ones. As someone who has gone through these terrible experiences, I encourage all men out there to get socially connected in the sheds. It is the only way you can see life positively or else depression will talk to you and suicide shock your loved ones.

LH: Yeah.

Adam: I get a lot out of being socially connected in the shed, if I didn’t I would be a cabbage if not dead. I now get along well with my wife and the rest of the family. If it weren’t of the shed, family relations would have been racked by now and my health would have deteriorated. If anybody mentions the shed I would say ‘Go for it mate, just go’, it’s the best thing they could ever do to improve their health and wellbeing.

LH: Wow.

Adam finished his answer by returning narrative control to me. I gave Adam a further opportunity to add anything of which he had nothing to add, and then I thanked him and finished the interview. This broad approach to narrative analysis was used in combination with thematic analysis described earlier, to develop contextual and relational understandings of the meaning of Men’s Sheds in the lifeworlds of the men involved. Through examining how the men constructed their stories and how they interpreted the shed experience I was able to work out these broader meanings in the data. The need to belong and have supportive friendships came to indicate the shed as a useful cooperative strategy used by men to self-
provide social support. This overarching understanding linked well with themes from thematic analysis to indicate the salutogenic effect of Men’s Sheds.

5.6 Chapter Summary

In this chapter, I described the procedures for conducting this qualitative study. With these procedures in place, I discussed the ethical issues, recruitment strategies, and data analysis process and clearly demonstrated that the methods used for interpreting the data were congruent with the philosophical underpinnings of hermeneutics. The next chapter, Chapter Six, will present interpretation of sub-themes and themes, which emerged from the process of thematic and narrative data analyses.
Chapter 6 - Understanding the impact of Men’s Sheds on the Health of the Men Involved

6.1 Introduction

This chapter presents the themes that explicate the impact of Men’s Sheds on the health of the men involved from an interpretive dimension. This interpretation emerged from a deep connection with the content of the in-depth interviews held with fifteen men involved in Men’s Sheds. An understanding of the phenomenon presented in this analysis, therefore, is an interpretation of the substance contained in participants’ words and the text formed by these conversations interlaced with the researcher’s comprehension.

In order to present my analysis of the experience of being socially included in Men’s Sheds and the impact it has on the health of the men involved in a useful way, I have deliberately arranged common patterns of understanding shared by participants thematically. The interpretation is presented in a pattern that moves from the expression of being socially included in Men’s Sheds to the themes, to the sub-themes and their constitutive concepts. By adopting this pattern, I do not mean to suggest my interpretation was structured and linear. Rather, as described in Chapter four, the interpretation was an interplay between the parts and the whole of the text. In this circularity of understanding, parts of the text opened a fuller understanding of the whole of the phenomenon of interest.

At a pragmatic level, the circular relationship between the parts and the whole led to the emergence of sub-themes, then themes and the core meaning of the phenomenon that is ‘regaining resistance resources and sense of meaningfulness.' It is common in many qualitative studies to present the sub-themes and then the themes. I have not followed this convention since the hermeneutic circle has no beginning or end. Again, I did not want to consider a linear process of interpretation. Rather, in this study I begin with a brief description of the themes and then proceed
to sub-themes from which the core meaning emerged and then conclude by returning to themes. I further present the narratives of wellness, which fit harmoniously into these themes to explicate the salutogenic impact of Men’s Sheds.

6.2 Regaining Resistance Resources and Sense of Meaningfulness

Upon reading and dialoguing with participant’s stories, I have come to understand the lived experience of being socially included in Men’s Sheds could be characterised by the expression: ‘regaining resistance resources and sense of meaningfulness to maintain health’, as Mike said to me:

... I became a loner and had no one to talk to, but since I joined the shed, I have regained companionship and learnt new skills and life is meaningful again. (Mike, 75)

I found ‘regaining resistance resources and sense of meaningfulness to maintain health’ to be an important representation of the participants’ stories. Although the participants were undergoing stressful transitions in their lives, participating in Men’s Sheds pointed to regaining resistance resources and sense of meaningfulness for the majority of the participants. Regaining resistance resources and sense of meaningfulness was drawn from the experience of being socially included and valued in their everyday life in the sheds. For participants, ‘regaining resistance resources and sense of meaningfulness’ essentially refers to the knowledge and experience of being valued by others and having a feeling that life makes sense, and challenges are worthy of commitment. The examples of such knowledge, experience and feelings are:

I joined the shed when depression had taken over my life; the supportive environment here has helped me to regain some control over things. To see that the blokes care for me has definitely improved my health and wellbeing (Peter, 63)

Charlie said:

Meeting new people and regaining companionship of people who value me makes the shed a beautiful place. I feel very good every day I come here to meet with other men. When I wake up in the morning, I feel very good because I know I am coming to this great place... I feel very free, free of every pain from my body, I feel completely well ... As soon as I walk through the gate I do not think about my aches and sorrow anymore. And I think to myself, thank God, everything is now under control, my health is good (Charlie, 72)
Stan said:

Knowing that I am in a supportive environment gives me confidence and hope that things will work out (Stan, 64)

Matt added:

When I came to the shed, it was my impression that everything was about carpentry, and I will gain knowledge in cabinet making, instead I feel I have gained very supportive friends who have made me believe in myself and be resilient. I am now spending more time doing things I enjoy (Matt, 64)

Paul also had this to say:

I think I would have died if I did not come here; the environment is very supportive and from day one life started to make sense, and I am coping better now (Paul, 69)

From the start, I do wish to state that this understanding of ‘regaining resistance resources and sense of meaningfulness’ is a theoretical abstraction of the participants’ experience. It appear somewhat analogous to the general theoretical framework of this thesis and is linked to the concept of salutogenesis. This theoretical abstraction, therefore, is realised or discussed in light of salutogenesis. More positively put, the concept of ‘regaining resistance resources and sense of meaningfulness’ is intended here to act as a central, coherent idea from where future arguments to support the impact of Men’s Sheds can be developed and advanced.

Through the fusion of horizons, the participants’ lived experience and my pre-understanding of the phenomena, the themes being-valued-in-an-everyday-world and being able to recover readily from life’s adversities, emerged during the interpretation process. These themes and their constituent sub-themes developed the concept of ‘regaining resistance resources and sense of meaningfulness’ from the texts that were verbatim transcripts of the words of participants. Together these themes form “an intricate unity” (van Manen, 1990, p. 105), which contributes to the complete picture of the impact of Men’s Sheds on the health of the men involved. The understanding of these themes is summarised below.
**Being-valued-in-an-everyday-world** means positive affirmation of the participants from the everyday world that drew them to consider and become clearly aware of their self-worth. The notion of being-valued-in-an-everyday-world explores the participants' experience in relation to their perception and awareness of being valued by others that was experienced during their participation in Men’s Sheds. Being-valued-in-an-everyday-world is the knowledge and experience of belonging to a supportive social network on one hand and the experience of being cared for by others. It also conveys a particular kind of therapeutic or health-enhancing relationship that includes the qualities of trust, safety and for many, the experience of feeling loved. Being-valued-in-an-everyday-world, therefore, relates to the process of belonging to a social network of communication and mutual obligation for the participants in this study.

**Being able to recover readily from life’s adversities** relates to the ability of the participants in this study to engage positively with their environment such that even if they are knocked down by life, they can reap the benefit of the positive factors of the environment and bounce back, often stronger than ever. This theme describes the antecedents of resilience and sense of coherence in the lives of the participants when dealing with even the most negative and hostile forces in their daily lives. The theme goes beyond an individual’s psychology, in this case the capacity of Men’s Sheds to positively affect the participants’ psychological orientation, which leads them to believe that even if they are knocked down by life, they can make the most of the situation and bounce back.

One story is told through these themes. The story forms a whole. Each theme tells one part of the story, yet none can stand apart from the other; they are, in fact, interrelated, and one theme always calls forth the other. Together they make up the whole of the impact of social inclusion provided by Men’s Sheds on the health of the men involved as perceived by the participants. Therefore, it is important to highlight to the reader that throughout the reading of the data analysis, the relevance of each theme for the other is expounded, as they are all components of the one experience.
6.3 Being-valued-in-an-everyday-world

In the process of interpreting the text, it became clear that one of the first issues experienced by all the participants was the perception of being-valued-in-an-everyday-world. As Paul and Joe said to me:

There is trust, and you feel you are loved and valued. ...There is a feeling that another person always cares about me. It’s helped with my self-esteem, coping with difficult issues, depression, distress and my overall sense of wellbeing. (Paul, 69)

I want to emphasise that I feel valued here. The support I received from other men, the behaviour and the loving care is affecting me directly and putting a positive effect on my health... The whole thing provides emotional support, companionship and genuine opportunities for meaningful interactions with fair-minded people. People who haven’t seen me for a while have come and told me ‘you have changed’; they can see the positive impact of the whole thing on my general wellbeing. (Joe, 66)

For most participants, participating in the shed is an important context for receiving validation of their worth in their everyday lives, especially after retirement. The world they found themselves in was supportive and can be seen as offering them a positive affirmation of themselves. As Mike revealed in the following excerpt:

When I came here, I felt I had gone back to my salad days where I was respected, and valued. (Mike, 75)

Eric also related:

My involvement in the shed is the best decision I have made in my life. It is a different world, where blokes just make you feel important all the days of your life. (Eric, 82)

The stories of Mike and Eric describe how they felt other men in the shed offered them a positive affirmation of themselves. Like most people, they developed their self-worth after receiving some form of validation. The consequence of being-valued-in-an-everyday-world was that participants were being drawn to consider their circumstance in their everyday world. The participants felt being-valued-in-an-everyday-world was the constant awareness and critical thinking of self. According to Stroutzenberger (1998, p. 152), critical thinking “involves examining with open mind things that are often taken for granted” and this process requires awareness of one’s interpersonal dynamics. Consequently two interwoven sub-themes emerged,
the awareness of self and being valued and appreciated, and these are described in the following section.

6.3.1 The awareness of self

The sub-theme, the awareness of self, was used to articulate the feelings of self-definition and affirmation upon experiences of being taken seriously, respected and listened to. George gave the following account:

*The whole experience was like being taken from a place where everyone saw a useless old man and placed in a world where people see a useful human being. I felt human again.* (George, 68)

This occurred to him from the moment he stepped into the shed. As he added that:

*The first time I went to the shed I sensed this genuine assurance of being accepted which made me feel good about myself.* (George, 68)

Simon also echoed:

*... I became aware of the non-judgemental social interactions. The blokes treated each other respectfully, and I immediately knew I was in the right place where I felt respected, and my skills valued.* (Simon, 63)

Matt also communicated the permanence of this awareness:

*The moment I walked into the workshop I felt welcomed, respected, and valued and all newcomers to the shed will always feel so.* (Matt, 64)

Participants explained how their awareness of being valued in the sheds was not a gradual feeling for which they had to first gain trust and cooperation of other men. Rather, they spoke at great length and in vivid detail about how at inception they became aware they were valued humans in their everyday world. John, for example, acknowledged:

*For me, it was that awareness right on my first day that I was valued, which made me change my beliefs that I had about myself and my situation at the time. I started feeling more positive about life.* (John, 80)

Most of the participants in my study perceived that as they go through everyday life, after retirement or retrenchment, they are overtly conscious of the differences they have to men in paid workforce. Everyday life was one where reflection on self was a
stressful one as most felt they were not valued. For these men, the awareness of being taken seriously, respected and being listened to was very important, which led to an overt contemplation of self. The presence of such positive affirming factors occurred as a consequence of the social inclusion provided by Men’s Sheds, resulting in an awareness of the participants to think about themselves and the supportive environment they engaged with in their new world.

An awareness of self is expressed by Phil, who referred to the ‘before and after’ of his experience of being socially included in the shed. Phil found that his life did not continue as before he joined the shed. Phil referred to before as the worst period in his entire life, which discontinued when he joined the shed. He described how the social inclusion provided by Men’s Sheds developed an awareness of being valued:

Before I went there [the shed], life was stressful, no one acknowledged me, no support whatever. Like every retired man, I woke up every morning thinking, ‘who the hell will ever acknowledge me? Have I lost my value? And then... I remember coming to the shed, sitting around a group of supportive mates and thinking, ‘the shed is the best way for me to regain my worthy. The non-judgemental social interaction and the awareness that everyone values me have made me feel better about myself. (Phil, 65)

The ‘before’ was prior to his involvement with the shed and referred to the stressful period. However, following involvement with the shed, his stressful life was changed, and he was now able to enjoy being-in-the-world where he was valued. This perception plunged the participants in this study into a new awareness, which facilitated a shift in thinking more critically about the impact on emotional health of recognising how valuable they were in their everyday world. John’s account is a typical example. He admitted:

I was leading into a new awareness of my likeness. I realised they [other men in the shed] made me feel important. They respected even my little skills in cabinet making and it was reassuring. This feeling has been an important contributing factor to my recovery from depression. (John, 80)

Paul also explained:

It was not until I joined the shed that I felt respected, which has been key to my emotional wellbeing. (Paul, 69)
Participating in Men’s Sheds brought an awareness of self and a feeling of being in a world that acknowledges the contribution these men make to society and their families. It had no resemblance to the everyday world before joining the sheds where they experienced that they were not valued. Rather, the environment in the shed was an important part of their self-worth, primarily because they felt valued.

The process of this overt awareness occurred with different triggers. For instance, an acknowledgement of a participant’s skill or attribute can be one of the conspicuous factors yielding a more positive (and health) outlook. For some of the participants, this process was a turning point in their lives while for others it was re-living the moments before switching from professional work to retirement. Paul said to me:

*It was on my second week in the shed and I remember I was really depressed during those days. He [shed coordinator] brought some plants and flowers and said everyone is free to take them home. They lay there all day and no one was interested in them. When I suggested we could plant the flowers around the shed to make the place more joyous and bright, everyone valued my idea and listened to how I planned for the landscaping. At the moment, I felt being the centre of attraction and that suddenly changed my world forever. I became aware that my skills are valued here and I started coping better with issues and my health has significantly improved* (Paul, 69).

Unlike Paul, who experienced a sudden change in terms of being aware his skills and knowledge in landscaping were valued, Simon’ awareness was triggered by the acceptance, which he so much needed to dampen the ravages of anger, pain and depression affecting him at the time. He recounted:

*I was always angry because no one cared about my pain and even my doctor thought I was exaggerating it. Yes, it was true I exaggerated it to an extent because I needed some attention. I am a bachelor with no one to talk to. I became depressed and unmotivated to do anything and felt I had no purpose, but when I joined the shed, the support in the shed conferred an immediate sense of purpose; I felt motivated and became aware I could break that cycle of rage and defeatism which fuelled my depression. Now I am not depressed and I am motivated to live a purpose driven life.* (Simon, 69)

It was not always a single issue that triggered the awareness of being valued. Fred recalls:

*It was very encouraging to realise I was respected and treated the same as others, and this was an important factor for me to realise I was valued* (Fred, 87)
This heightened awareness of self, triggered by participating in Men’s Sheds was mostly confined to being valued in the everyday. The next section details the theme ‘Being valued and appreciated’.

### 6.3.2 Being Valued and Appreciated

The sub-theme, **being valued and appreciated**, was for the participants a consequence of self-awareness arising from being-valued-in-an-everyday-world. Being valued and appreciated came to me as I engaged in a dialogue with the participants’ stories and fused my horizons of understanding of the phenomenon. Participants in this study expressed appreciation from other men in the sheds and experienced that they were valued and their talents recognised. Evidently the self-awareness of being valued, appreciated or recognised played an important role in shaping their quality of life. As Peter narrated:

*Before I joined the shed I felt depressed, upset and ignored. I was insecure. I craved to be appreciated by other people, but received none. I felt my talents were overlooked because of my age. My pride was hurt. ... But when I came here, I was valued and appreciated and my quality of life improved significantly. (Peter, 63)*

Participants explained how their involvement in Men’s Sheds often followed periods, such as retirement or retrenchment, for which they had struggled for positive recognition. The struggle for recognition was about feeling valued in their everyday lives, which they eventually found in the Men’s Sheds. Most participants felt the sheds offered them an opportunity to have their various skills recognised and subsequently felt appreciated. The experience came across as being extremely emotional and significant in the lives of participants. From the participants’ stories, it was clear that being valued and appreciated was an important part of their self-worth. The esteem accorded to the participants was central to regaining resistance resources and sense of meaningfulness to maintain health and the participants responded to this recognition at a psychological level.

Simon’s feeling of being valued and appreciated was expressed as a self-conscious emotion. This reflected a psychological benefit to health that existed as a result of
feeling good about how others perceived him in the shed. He recounted in his story that:

I was humbled by the respect given to me. ...I took a deep reflection and felt I’m still a special person destined for greater things. Now I prefer to see myself this way and the feeling has provided a deep sense of satisfaction with life. (Simon, 63)

Self-conscious emotions are connected to how people see themselves and how they think other people see them and are based on cognitive processes such as social comparison (Buunk & Gibbons, 2006; Niedenthal, Krauth-Gruber, & Ric, 2006). Regardless of the correctness of the assessment made, one’s comparison to others offers a way of enhancing one’s self-esteem (Poorthuis, Thomaes, Aken, Denissen, & Orobio de Castro, 2014). By comparing themselves with others, often those not involved in Men’s Sheds, most participants put their own situation of being valued into perspective. The following Paul’s story, is an exemplar:

All in all, I feel my present state of health is better than most men of my age out there. It’s cold and stressful out there. No one cares about you! But here you are valued and everyone cares. ...That’s why I say coming here [to the shed] has improved my general health. (Paul, 69)

The following extract demonstrates another example, Fred, a frail 87-year-old man suffering from congestive heart failure and failing sight, who nevertheless perceived his health as good. Judging by his remarks, we can deduce that this perception was at least partly the result of juxtaposing his own situation of being valued in the shed with that of men not involved, who may feel unvalued and end up in a nursing home:

My cousin who refused to join the shed ended up in a nursing home. You know, when you see all those men sitting in chairs, who are younger than yourself, it makes you think. You feel that you are well off as you are, that you are lucky to be in the shed where you are valued. (Fred, 87)

Eric added:

I’ve had some trouble with my heart and my feet are swollen as you can see [pointing to his oedematous feet], but I am better than my brother who spends the day lying at home. ...He is 5 years younger than me but he keeps to himself. I think I will continue coming here (Eric, 82)

By using the experience of being valued as a yardstick for the perception of their health, the participants expressed what they regard as good health based on self-
conscious emotions. Being valued and appreciated in the shed enabled them to minimise their own physical ailments and thus preserve or regain a positive image of themselves. In other words, being valued made them to be emotionally less affected by their own deficiencies. Rather it helped them maintain a positive opinion of their health, by focusing on the contrast between their own conditions and that of other men not involved in Men’s Sheds.

The concept of being valued was also shown to contribute to positive personal outcomes. Positive outcomes included self-evaluations associated with good health and wellbeing, e.g. the ability to stay healthy and safe, and managing and coping with stressors in their lives. Charlie expressed this positive personal outcome:

*If not for the Shed, I would have harmed myself. ... Having others listen to me and respect me made me stop thinking about bad things.* (Charlie, 72)

This is a very powerful remark given the rate of suicide in older men. A further example of the positive personal outcome from being valued is found in Ron’s story. He related that:

*My recovery from depression was not only supported by taking the antidepressant pills, but also by noticing that I was still being valued as useful in the society. I do not doubt the power of the pills, but when I became aware that the blokes respected me, I did not stress too much. ... I now strive to entertain only positive thoughts and LG - life is good.* (Ron, 74)

Stan’s story is another example of positive personal outcome. He related in his story that:

*I now feel more equipped to deal with difficult situations than before.* (Stan, 64)

George also recounted being valued and appreciated in the shed has made him a happy and healthy person. He stated that knowing that other men held him in high regard cultivated his happiness and improved his body defence against illness as he related:

*Now I do not get colds willy-nilly as I used to. My general health has improved since joining the shed and I am very happy.* (George, 68)

The participants identified their triumph over physical health problems and negative mental states such as depression, anxiety and fear as closely related to the
experience of being valued, which triggered positive emotions and led them to engage positively with their environment. In the following extracts Paul explained how being valued led him to find more meaning and purpose in life, which eventually improved his health. Paul reported fewer aches as he related that:

*Within the first month [of involvement in the shed], I felt more effective at what I did and started being positive about life. I slept better and this helped with my migraine attacks. I also started to walk a couple of miles with little pain. ...To answer your question, yes, the experience has been a good one for me.* (Paul, 69)

The perception of being valued contributed to sensibly awareness of the present moment and increased positive relations with others, both inside and outside the shed. Fred discusses his experience that:

*Now I feel more confident connecting with different people. You can have all the friends in the shed, but you still need to connect with other people. I don’t believe I did that very well before I came to the shed.* (Fred, 87)

Another participant added:

*Men’s Sheds gives you an opportunity to make new friends and connect with your community. ...I now have more friends both in the shed and outside the shed.* (Joe, 66)

Being valued and appreciated gave the participants a strong sense of meaningfulness in their lives. Meaningfulness is the realisation that life has a purpose and acknowledgment that there is always something for which to live for (Antonovsky, 1979). Beyond the specific stress factors that some men were encountering in their everyday lives, most felt getting some form of valid ation from others nurtured the belief that there was a reason to persist and confront challenges. The following extract of Matt’s story is a typical example of an often-repeated experience of a strong sense of meaningfulness of life:

*I was very, very poorly in the early winter of 2012 [before joining the shed]. I had a high case of social anxiety and high blood pressure that made me always sad and tired. Life had lost its meaning and no one cared. I guess I was a terrible nuisance. ...You always have someone to talk to here and people listen and value your opinions, which has helped with my anxiety. Although I am not 100% yet as my blood pressure keeps dropping like a stone, but I am now happy and living a purposeful life.* (Matt, 64)

The key words in this excerpt are ‘happy and living a purposeful life’. As a man who had lost a sense of hope and meaning, Matt believed that things in his life became
interesting and a source of satisfaction when he was valued by his colleagues in the shed. Therefore, meaningfulness came when his friends offered him positive affirmation of himself.

Being valued also served to express the men’s perceived feeling of manageability. Manageability is the extent to which people feel they have the necessary resources to take care of things, and that things are controllable (Antonovsky, 1987). A consequence of feeling valued and appreciated was associated with a strong sense of manageability. Simon’s story discloses how he felt:

Knowing that people value me and that I can turn to them for support any time has strengthened my ability to deal with issues in my life. (Simon, 63)

According to the WHO, from early childhood onwards, we need to feel valued and appreciated (Wilkinson & Marmot, 2003). Being valued and appreciated can be seen as offering a salutogenic environment (Macdonald, 2005). The experience of being valued and appreciated for the participants was characterised by feelings of happiness, belonging, and satisfaction with life, hope, meaningfulness and manageability. The two sub-themes of ‘self-awareness’ and ‘Being valued and appreciated’ are both an expression and consequence of the participants ‘Being-valued-in-an-everyday-world’ Aware how their colleagues in the sheds offered them positive affirmation of themselves in the everyday the participants are drawn to reflect and evaluate their situation. This aspect of the participants experience in itself is significant but it should not be viewed in isolation. It can be viewed as a starting point for the valuable role of Men’s Sheds in building resilience and sense of coherence in the lives of the men involved, as a part of the whole.

6.4 Being able to recover readily from life’s adversities

Being able to recover readily from life’s adversities is the next theme to be discussed. I came to understand the centrality of the role of social inclusion provided by Men’s Sheds as facilitating resilience and increasing the sense of coherence in the lives of the participants. Having the awareness that they were valued in their
everyday world, and coping resources enabled the participants to engage in creative responses to adversity and be resilient for a time. Resilience is “the dynamic process of adaption despite adversity” (Reed-Victor & Stronge, 2002, p. 160). It requires management of the difficult in one’s environment, which links well with the concept of salutogenesis. For the participants in this study, identification of the positive in the environment allowed them to be resilient and reap the wellbeing benefits of the sheds. As Paul revealed in the following excerpt:

*Listening to the stories of other men in the sheds has made me to choose to be a survivor when confronted with bad news. ...Before I joined the sheds I used to jump into extreme conclusions when confronted with bad news. For instance three years ago when I developed a persistent cough, I concluded that it must be cancer yet it wasn’t. Through listening to victory stories here, I’ve learnt to steer clear of catastrophic thinking.* (Paul, 69)

Many participants had similar experiences:

*Socialising with other men has taught me to be the hero rather than a victim of my life. One of our oldest guys here is now 90 and he’s been coming since the start. He lost his left hand in the war and he’s had more than 10 major surgeries on different parts of his body but he is keeping strong. One thing I have learnt from him is to avoid dwelling on negative life scripts and concentrate on the positives. ...So that’s the power in talking about the positive that has provided me with the ability to make good out of bad in my life.* (Joe, 66)

**Being able to recover readily from life’s adversity** in the context of this study refers to the ability of the participants to recover readily from illness, depression, defeat, or other kinds of adversity and describes the resources used by these men. The elements of this aspect of the ‘recovery’ are to consider the resources in the sheds, which impacted on the health and wellbeing of the men involved. Resources such as social support, accessing health advice combined with internal resourcefulness of the sheds (hands on learning or passing on skills, seeking help or talking about issues) were positives, which strengthened the wellbeing of the men involved. Therefore, in the theme ‘Being able to recover readily from life’s adversities’, the two sub-themes that emerged were **Reaping the benefit of the positive factors of the environment** and **Being resilient**, and are described below.
Reaping the Benefits of the Positive Factors of the Environment

The sub-theme, reaping the benefit of the positive factors of the environment, is where participants spoke about being nourished by the positives in the Sheds. Participants engaged with positive resources that fostered their health and nourished their wellness. A range of practical and emotional resources associated with promoting health and wellbeing were evident in conversations:

When you feel supported, you tend to manage your situation better. My positive relationship with other men in the Shed has given me the power to be in control of my daily experiences, which has helped me manage my worries well. It gives me the assurance that no matter how big the issue might be, it can still be resolved. (Joe, 66)

The availability of social support to the participants strongly determined the outcome of dealing with daily challenges. In other words, most participants while managing the hard blows of life, reaped the benefits of the social support provided as observed by George:

There is always someone to confide in, and people do care for each other here. If you focus on these good things, you’ll begin to like the shed. ...I always find it easier to deal with whatever challenge I may be facing when I know I am surrounded by people that listen and care for me. (George, 68)

For some men, being part of a strong social support system made them feel loved and important as acknowledged by Fred, an 87 year old man who had multiple comorbidities and a hard upbringing. Fred speaks of the importance of camaraderie in the Shed and contrasts it with his upbringing:

Being the oldest guy here, I feel loved and very important. I came from a very abusive childhood, from both parents. You know children are amazing actors. I just used to pretend everything was okay, but I did not feel loved and protected. Even in my adulthood, I kept to myself, as I believed no one cared in this world. It’s different in the shed, here am I in my last years, feeling loved and important and I am enjoying it. (Fred, 87)

Peter observed that feeling supported by his friends in the Sheds increased his self-confidence and self esteem, which contributed to better management of his stress.

When you have adequate support you tend to be optimistic. I think positively about myself and always remind myself that, despite my problems, I am a unique, special, and valuable person, and that I deserve to feel good about myself. ...Some blokes here
have huge problems, too big to compare them with mine but they are happy and positive. I have adopted their attitude and it has helped me live a stress-free life. (Peter, 63)

He [Shed coordinator] has taught me to identify any negative thoughts that I may have about myself and replace them with the positives one. This is one thing that I have done so well and it has changed my life for the better (Ron, 74)

Another quality distinctive to the impact of social inclusion provided by Men’s Sheds emerged through the men’s stories. The experiences of unresolved painful emotional experiences such as loss, trauma and disturbances in core relationships, were legitimised and given attention. For instance both Paul and John reported specific moments they felt supported by their friends in the following loss of their partners. They recalled experiencing a deepening of affect and a sense of relief during their respective engagement with other men in the shed and being supported by them:

I was feeling lonely and scared, back to when my wife passed away. So [shed participant] reached out to me and said let’s go the shed. When I came here, it was a huge relief that I wasn’t on my own and I didn’t have to struggle with things by myself. I was being listened to. I remember what a release it was just to have a bloke touch my shoulder and say, ‘we love you here’. That felt so good, it was really cathartic. (Paul, 69)

John also reported:

After the first month in the Shed I felt so much better. I felt so relaxed, I felt that all the unpleasant feelings that had worried me since my divorce 8 years ago had diminished, and also now I sleep well at night and it really is quite a dramatic improvement. (John, 80)

Consistently the men explained the positives that they tapped into the sheds as being based in their experience of feeling deep care and validation from their supportive mates. Both deep care and validation were intrinsic to the actual emotionality of the social inclusion provided by Men’s Sheds. Despite several comorbidities and stressful past experiences, the men’s readiness to make meaningful connections and to focus on factors that foster health is, I argue, even more remarkable.

The following story clearly expresses the significance of positive interaction with the environment in the sheds.
Charlie’s story

I retired back in August last year [2012], and I found that even though I was quite happy to - I loved my work but I was quite happy to finish up. But after a few months I found that the one thing I did miss was the comradeship of my co-workers. I got so stressed and ended up being diagnosed with depression and my blood pressure got worse. Coming here has helped with my depression and blood pressure. I've been on blood pressure tablets for the past twelve years, however, since I started coming here I've had to halve them with my doctor's consent. So I've halved my blood pressure tablets. Now is that totally from Men's Shed or is that partly from Men's Shed and partly from leaving work, I’m 100% sure it is totally from the Men's Shed. My encounter with a very supportive environment has enabled me to manage my worries more effectively. The whole experience is therapeutic.

I usually get a lot of criticism at work when I tell them about the Men's Shed because they think it is for very old men with little education. Yes, there could be lots of old and uneducated men but if you focus on the supportive environment created in the shed, you'll understand what I am talking about. I am a living testimony of what Men’s Sheds can do to your health. I have survived depression and now I have halved my blood pressure tablets. I now know the importance of a supportive social network in managing my blood pressure. To me, that’s what Men’s Sheds do. I don’t buy into all these stories about old men and dementia. I’m saying this is a personal experience. I’m talking from my own experience, I don’t know the effect of Men’s Sheds on other people but when it comes to myself, yes, I experienced it and for me it has been extremely helpful for my physical, psychological and spiritual wellbeing.

In Charlie’s story, what is of particular interest is his focus on the positive or salutogenic aspects of Men’s sheds. He chose to reap the positives in the shed environment. Social support and connectedness are, of course, the health enhancing factors that he describes as having helped him manage his situation better. Charlie’s therapeutic encounters with the Men’s Shed can be understood as salutogenic in that he was able to understand and therefore manage his situation more effectively. It did not take away all the causes of his hypertension - in part, the result of irrevocable separation and loss, but in his encounter with the Men’s Shed, the social connections gave him an experience of feeling attended to and he experienced an improvement in wellbeing and maintenance of health without medicalising his experience.

The explicit emphasis on the health-enhancing responses of social inclusion provided by Men’s Sheds was experienced at the broader social level. According to the
salutogenic model, the social is a key factor in developing coherence and meaning (Antonovsky, 1990). Antonovsky suggests, “strong personal ties to others; deep roots in the broader community; and homeostatic flexibility or resilience are important factors in determining health” (1990, p. 75). In the context of the encounter with social inclusion provided by Men’s Sheds Ron reflected Antonovsky’s emphasis on the importance of social connections when he said:

“I feel as if they [men in the Shed] are like my family, they are my best friends. I’m very happy to be around them, they are changing my world; they give me the peace of mind and ease my pains. ... I sleep well; I’m more patient with my children now. I remember my father in his last days, he was too old but he had lots of friends. They put a smile on him even when his body ached. ...These blokes are also putting a smile on me, a smile that has taken away all my pain (Ron, 74)

Through the relationship with a group of his supportive mates, Ron was able to weave positive memories, the healing connection with his late father, into his present painful life, finding some comfort in these connections. The significance of social connections was a tangible link between past and present, directly building a sense of coherence for the participants. For Ron, enabling him to live a pain free life and be more patient with his children. Later on, Ron expressed that reaping the benefit of the positive factors of the environment has given him hope for the future:

“When I first came [to the Shed], I had no hope for the future; I was too worried and thought that I was going to die as I was always in and out of the hospital. But slowly, I picked up, leaning more on the social support here (Ron, 74)

Leaning more on others for support may provide important ways of remaking the self in a new world, one in which there is hope for a future as reported by Matt:

“I have heard a lot of guys saying coming here [to the shed] helps reduce stress levels. I totally agree with them, there is always someone to share your problems with. ...You know, it was [shed participant] who gave me ideas on how to overcome anxiety. ...Look at me now I am stress free and hopeful for a better future (Matt, 64)

Stan and John added:

“It doesn’t matter who you are because everyone is equally respected. It makes you feel important and wants to move on (Stan, 64)

Even if you are new in the shed, they will listen to you, you know. It’s got a sort of ambiance about the place where even if you have got an issue there is always someone who can help you out with it (John, 80)
As participants continued to reap the benefits of positive factors in Men’s Sheds, some were critical of the Western medical preoccupation with illness. Although grateful for the extensive medical treatment for various comorbidities, the participants’ encounters with curative care often left them feeling unheard and sometimes distressed. In most of these situations the conflict appears to stem from the conflicting explanatory of Western medicine’s inability to consider social factors that enhance health and wellbeing in favour of those that cause illness. The following narrative is Mike’s example of the problematic clash between Western medicine and his experience of Men’s Sheds, which he felt enhanced health and wellbeing:

I had been seeing her [the GP] for ten years. In all those years, she had always emphasised on adhering to treatment and making sure I saw her more frequently and stopped smoking. She never told me about the importance of joining a supportive group like this one I am not saying she is wrong but they all [doctors] speak a lot about illness not health, I think that is how they are trained. (Mike, 75)

In asking the men specifically about the experience of social inclusion provided by Men’s Sheds, by default, any negative experiences with medical treatment were sometimes revealed. As the participants described their health problems, often anxiety and depression issues before they were involved in the Sheds, they inevitably spoke about their experiences of curative care, which for many included ineffective treatment and even detrimental experiences, for example:

When they [doctors] give you the antidepressants they make you sleepy and you are bound to stop taking them. Whereas talking to various people in the shed and be supported by them has been helping to lessen the anxiety and even the hopelessness. (Stan, 64)

I go to Dr. [Y]; she doesn’t talk to me much. All I get is a prescription after prescription. They don’t care so much, but here people do care and talk to you. I feel better when I am here. (Charlie, 72)

Importantly, it must also be acknowledged that often the men were grateful for access to medical help and many also had positive experiences, for example George recalled:
She [doctor] shows so much empathy with me ... I feel the sympathy in her eyes when I am telling her my issues. At one time she referred me to professional counsellors (George, 68).

Although problematic experiences with medical treatment were prevalent throughout the participants’ stories, such issues are not the primary focus of this research and they were not directly part of my interview schedule. However, they are only mentioned in this analysis where a link was made to the positives associated with Men’s Sheds, for example:

I went to the doctors and explained [my symptoms] and they thought I had depression. So they gave me Prozac [antidepressant], which worked well but caused me lots of problems with my stomach and I stopped taking it. They changed me into another one, which was worse and I stopped taking it altogether. I didn’t want to go back to the doctor. I lost hope in recovering and just wanted to die. My wife is my hero because she said why don’t you try the shed and spend time talking to other men. ...I came here and the environment is great. I do not feel frustrated and hopeless any more. I have so many friends and how I wish Dr. [X] had prescribed me Men’s Sheds instead of Prozac or Zoloft, which almost killed me (Mike, 75)

6.4.2 Being Resilient

The sub-theme, being resilient, is where participants spoke about resources in the Sheds, which strengthened their personal lives despite having experienced harsh conditions. Resilience is the strength in a person’s life, which is determined by inference from the context of life adversity (Masten & Powell, 2003). The two conditions required to identify this strength in a person’s life are exposure to significant adversity that requires strength to overcome it and the ability to live well despite having experienced harsh conditions (Luthar, Cicchetti, & Becker, 2000; Masten & Powell, 2003). It was apparent from the participants’ stories that these two conditions were persistently voiced by most of the participants. Also of note that this resilience is clearly a part of what Antonovsky meant by salutogenesis.

Many of the participants were grappling with the consequences of unemployment, retirement, deaths of loved ones as well as loss of other human and material resources, and they reflected on their adversity. Stan, a 54-year-old participant
explained, “because I separated with my wife, I have lost my whole family- I can’t see my children because of the court order”. Matt a 65-year-old participant who lost his job elaborated that, “losing my job was a profoundly distressing experience in my entire life” Adam, also mentioned that:

I lost my daughter. I lost a cousin in war. I lost an aunty and two cousins. Two of my best friends from young also died. Yeah...I’ve lost friends around here too and it has been a very hard life without most of these people (Adam, 79)

For some older men like Fred, it was loss of independence as a result of ageing and the disease process that brought strain:

I’ve had two falls at home and the last one I broke my hip and had to be admitted at [hospital]. On discharge my daughter said “Dad, you have to choose between a nursing home and living with us because you are no longer safe here”. So I chose to live with her and the husband. Twelve months earlier I had lost my wife, now I was losing my place too, you know, that’s not easy. I cried to my sleep everyday and it affected my whole being (Fred, 87)

As mentioned by Fred above, it is the whole being that is affected by an extreme adversity - the body, mind, spirit, and relationship with others. Like other men in this study, he felt he was uprooted from his home, and his daily routine disrupted, as he had to depend on his daughter and son-in law. The same applies to the loss of human and material resources by Adam, Stan and Matt outlined above. There was no guarantee that what awaited them was a haven without their most treasured resources. Any human being in these circumstances would be devastated. However, these men and others in this study also share how they were able to face their adversities positively due to consistent supports in Men’s Sheds. For instance Stan expressed speaking with a close friend in the shed and having faith in God as his way of dealing with feelings of sadness or loneliness whenever he missed his children, whom he could not see because of the court order:

I catch up with [friend] most of the time and we talk about it. ... He’s a friend and a spiritual leader. Also whenever I am sad I remember him [friend] saying, “have faith, it shall be well”. I know when I am sad he is sad too and he will pray for me and that nothing will happen to me, and all my troubles will be taken care [of] by God. He [the friend] is very special to everyone in the shed. We are lucky to have him. (Stan, 54)
Matt explained that listening to the stories of other men who lost their jobs made him believe that losing his employment was not due to his own fault, but that he like others were victims of large market forces:

I always blamed myself for losing my job because of argument with this other bloke 5 months earlier. He was very close to the manager and I thought they were the reason my contract was not renewed. It worried me but what surprised me was that 5 other chaps lost their jobs too. By listening to retrenchment stories, I now understand it was not my fault that I lost my job but economic challenges and this has made me more satisfied with life as I was before I lost my job. (Matt, 65)

Although photo conversation was never part of my interview strategy, most men presented photographs of themselves with other shed members. They confidently conveyed that their strength came from interacting with their supportive friends in the sheds. Cooperative strategies not only instilled courage but also gave support and protection at all times. The availability of enduring supportive environment made a significant impact on the life-worlds of the men involved in Men’s Sheds. Fred discusses his experience that:

Coming here has been helpful for me. The blokes are caring here and they have provided enough help [protection] for me to keep all my worries from overwhelming me. These nice looking chaps you see on this photo [pointing to a photograph of shed participants] gave me the strength [fostered resources within him] to live on. For me the shed provides a valuable source of support, particularly the support from [shed coordinator] who calls me all the time to check if I am ok provided me with a feeling of safety and security. (Fred, 87)

In this study it was clearly demonstrated that the shed community as a whole also played a major role in supporting the men deal with their daily hassles in life. To give an example, during the data collection phase I learnt that there was a crisis in Simon’s family. Therefore, almost all the shed members within that community took over the trouble of assisting Simon until the situation stabilised. Simon’s family continued to perform all their routine activities with this support. Later on during the interview Simon described this gesture as very helpful in stabilising a crisis in his life and allowing him and his wife to bounce back:

Our shed is a source of strength and love, hence it has become my second family, you know. Since I joined I feel no one faces a crisis alone. Let me tell you a story. Early last month, my German Shepherd attacked and injured two of my neighbor’s lambs. He sneaked under the torn fence and my neighbor was understandably furious, demanding that I pay the vet fees and he threatened calling the police and the council, you know. I was stressed and it was a crisis. [Wife] decided to miss her chemo appointment so that she could be home to support me. I called [shed coordinator] to tell him I wouldn’t be
attending the shed due to the crisis at home. To my surprise, he mobilised all the blokes from the shed and they were in our property within a few minutes. They helped me mend the fence and assured me we were in this together. I felt real supported. [Shed coordinator] insisted my wife goes to the hospital as planned and assured her that they will be with me until everything was sorted. My neighbour who had been yelling at me all the time softened his voice when he saw this group of men helping mend the fence, and by the time the cops came everything was under control and the vet had attended to the injured sheep. I feel my friends’ gesture was very helpful in stabilizing a crisis that had befallen us and it allowed me and [wife] to bounce back much stronger. (Simon, 64)

Joseph (2007) acknowledges that the “predictability that comes from a routine helps stabilize the chaos that so often follows a loss or crisis” (p. 279). In other words, it offers security as well as builds and sustains resilience. This process of buffering goes a long way to prevent the activation of the HPA axis described in Chapter 2 that could lead to effective coping. This attention to diminishing overwhelming stress in a timely manner results in the development of resilience or positive adaptation (Joseph, 2007) and does not only prevent illness but also promotes health (Zautra, Hall, & Murray, 2008). Indeed, resilience remains an important category in mental health and wellbeing discourses symbolising a number of positive aspects situated in the mundane of being well even in the presence of adversity (Nygren et al., 2005).

John recognised the centrality of friendships in the shed in shaping his strength of character and improving his wellbeing while encountering numerous challenges:

Being retired with diabetes and a heart problem and losing close relatives and friends, life was full of ups and downs. It is hard to describe exactly how I was able to manage. But it involved perseverance, commitment and courage to accomplish my dream. The blokes in the shed played a great role in my life in many ways. We always talk and support each other as men and feel better about our problems. The hardship I overcame motivated me to be strong, struggle and never give up whatever the case might be, that was my motto and I am well. Survival was not a problem anymore because I have learnt to be positive and content with life and the doctor recently told me my sugars have stabilized and I am hopeful my heart will also improve soon (John, 80)

Ron echoed similar elements in what helped him gain a sense of resilience:

People react differently to challenges and in my experience I became resilient when I found myself having rheumatoid arthritis and losing my close friend at the same time. When I noticed how supportive my friends were, I began to realise my abilities of quick recovery from illnesses, stress, helplessness, and from many obstacles I saw in front of me. I realized and believed that the circumstances I went through, helped to enhance my resilience and I often bounced back feeling much better. (Ron, 74)
Clearly for many of the participants there was recognition that participating in Men’s Sheds had strengthened their personal lives despite challenges from retirement, chronic illness and loss of human and material resources. They believed that being resilient enabled them to manage their environment more successfully - a precursor for good health. The participants have shown that their burdens became lighter or easier to carry on account of the numerous supports they were given from the Men’s Sheds. Although life still held tensions and hardships, however, the social inclusion provided by Men’s Sheds somehow enabled them to take big strides to work through the challenges. The consistent support of human and material resources from the Men’s Sheds played a major role in sustaining their life-worlds. They internalized the concept of being there for each other and maintained a cooperative strategy, which gave them the courage to approach friends for help. Even in old age, most showed a very positive outlook on their future and were motivated to pursue their dreams, which in most instances kept them healthy.

6.5 Narratives of Wellness

The men used narrative to construct accounts of how it was for them to be socially included in Men’s Sheds. These narratives extend understandings of the awareness of self, being valued and appreciated, reaping the benefit of the positive factors of the environment, and being resilient reported above. This enlarging horizon further reveals that the focus of Men’s Sheds is not to provide cure for the medical issues, but to offer a space and also a time in which the men could allow their bodies, minds and spirits to speak to the complexity of their circumstances. Implicit in this space is the understanding that the holistic conception of health and wellbeing is dependent on how one’s emotional states affect one’s physical wellbeing and vice-versa (Diener & Chan, 2011).

In these stories the men claimed the social inclusion provided by Men’s Sheds attended to their psychosocial and spiritual needs while helping them acknowledge their lived experiences. In this way, what was happening was strengthening the men’s entire mental and bodily systems and restoring their inner balance, instead of
tackling only the physical manifestations of the illness. The men’s stories illustrate how the combination of a safe space and, for many, the emotional support, created an environment of deep inner healing despite the presence of physical symptoms. To present these narrative accounts of social inclusion provided by Men’s Sheds I use extended narrative excerpts from five men. Short narrative extracts from other men are included to display breadth to this form of sense making. Note that these men came from different sheds and common themes and general principles were found by comparing their subjectivities, experience and contexts.

6.5.1 I am Happy and Well- The Narrative of Being Valued

For most of the men the awareness of being valued was a referent in their everyday lifeworld. The awareness of being valued and appreciated as relevant to experience were often deeply entwined and viewed in opposition to painful memories of feeling unworthy and ‘useless’ and for some, severed connections with loved ones. To show this the men recounted particular experiences that confronted their lack of validation outside the shed with the reality of being valued. It was in these circumstances that the men saw their self-worth and realised that Men’s Sheds offered them a place for their own energies to engage with others and to be supported by them, and this had a positive impact on their mental and bodily systems. Health as positive engagement with the environment of people’s lives is demonstrated through these narratives.

In describing their awareness of being valued and appreciated the men time and again included how the experiences brought about happy thoughts, which made their bodies feel relaxed. As discussed in the early chapters, one’s state of mind is the result of their brain integrating particular experiences. Matt recounted a pivotal life experience to explain how it contrasted with his awareness of being valued and appreciated in the shed. This narrative came after Matt realized remarkable changes in how he interacted with the world and dealt with distressing life experiences. Matt described his awareness of being valued and appreciated in the shed created in him
a positive state of mind, which despite circumstances made him well in his body and happy in the way he interacted with the world.

This episode is embedded in an extended explanation of how Matt came to realize he still had physical symptoms. Matt’s point is that whilst one might physically look ‘unhealthy’ this does not mean that one feels ‘unhealthy’. To reinforce this, he contrasted his podagra (swelling, and extreme tenderness in his left big toe due to gout) with an isolated man who does not have physical symptoms but thinks and acts ‘unhealthy’. To the gout-affected Matt, good health is in one’s mind. Matt began with an understanding that wellness is experienced when people have happy thoughts, which allows the mind, body and soul to work together:

Matt: [Summarising his experiences of social isolation before joining the shed] …and I did feel unloved and unvalued. People don’t care out there and you can see it on their faces. I can’t blame them, everyone is busy trying to make a living and we have to respect that. It is cold out there, very cold with no one to turn to, except to go to the pub. It is different in the shed and I’ve been supported and valued, you know, the blokes think I am smart and all that. So I think all these things all add up and I feel that’s probably why I’m reasonably happy and well today, well feel reasonably healthy, put it that way. My entire body feels relaxed and full of energy despite this swollen toe.

LH: Umm, tell me more about that

Matt: Yeah

LH: and you feel healthy with a swollen toe?

Matt: Yes [laughing]

Through the use of simple narrative Matt then explained how he came to realise that he is healthy despite the diagnosis of gout. He provided an abstract of the breach of his lack of validation outside the shed with the reality of being “valued and always treated with respect in the shed” - followed by a specific incident where he stopped
taking painkillers and sleeping medication when confronted with “a relaxed and pain
free body”:

Matt: I like it because I feel valued and always treated with respect in the shed.

Before I came here, I was not happy with myself and felt deep in my heart no
one cared for me. It affected me in a very profound way and my body
experienced lots of pain especially on my left toe from the gout, you know. It
went on and on until I came here. Through coming here, I’ve found different
things have come to mind regarding health. I now believe there the mind can
tell the body to switch the pain on and off dependent on how happy or sad
you are. I’ve had it pointed out to me that several times that my left toe looks
swollen and well I’ve often thought, you know I am ill, until I felt no pain and
went to my GP who said as long as I don’t feel pain I am not in any danger. I
haven’t taken any painkillers and when I come back from the shed my body
feels relaxed, you know, I sleep like a baby and do not need to take any
sleeping tablet. Obviously this experience has taught me a lot about how you
feel determines your health I met a bloke one day, I was supposed to meet
him down in Parramatta and he said, “Oh since my wife passed away, I’m
really lonely, isolated and sick. I eat once a day and drink everyday” he said,
“I’m so unhealthy that I can drop dead any time,” and I stood there
dedulously listening to him and I looked to see if I could see any physical
symptoms of a disease but saw none and I asked him if he has been to see
the doctor he said he has but he does not have any existing illness, I looked
down my left toe and saw my gout and I thought gee I am healthy than this
bloke. I am glad I managed to convince him to join the shed and things have
turned positive for him, including finding new love with a young woman
[laughing].

Matt concluded with an evaluative statement of the point of the narrative - although
physically I might look unhealthy because of the gout, I do not feel unhealthy:

LH: Mmm
Matt: So yes, when you are valued and treated with respect you feel happy and good about yourself and despite physical illness, you feel well

LH: Mmm

Matt: how well you are, depend on your surroundings - if your surrounding is good and your mind likes it, it makes your spirit happy and relaxes your body, but if bad, it stresses you and make you feel awful. I believe there is a big connection among these things.

6.5.2 Springs of Wellness- Narratives of Body-Mind-Spirit Connections

Matt’s understanding is consistent with the understanding of body-mind-spirit connection to wellness. I took the opportunity to explore the notion of the body-mind-spirit connection to wellness as it relates to social inclusion provided by Men’s Sheds with Matt. He considered the body-mind-spirit connection to wellness as “one of those unexplored facts of life” and could not offer a causal explanation. However, he subsequently used narrative to return to his point that “you are as healthy as your mind and spirit are happy and at peace with your environment”. Matt linked in a short narrative about a man in the shed he had recently talked to who believes he is healthy and well despite a recent leg amputation. In Matt’s view, the supportive environment in the shed made this man’s mind and spirit to be at peace with each other, which ultimately contributed to soothing of his pains and making him believe he was well. The endorsement of the holistic view of health is used effectively by Matt to make his point and make a claim for his own mind-body-spirit connection:

LH: A lot of the men that I’ve talked to and also the literature does talk about this so-called ‘mind-body-spirit connection to wellness’

Matt: Yeah yeah

LH: and that view that when the mind, body and soul work together we feel better about ourselves and experience wellness.

Matt: Yeah, I mean that’s pretty true I think. The fact that you see yourself well and feel good when you come to a group of supportive mates is testimony that your body is relaxed and your mind and spirit are at peace. You feel as fit as a
fiddle despite the physical symptoms of an illness, and you always look and see the other bloke who looks physically better than you, and yet in reality he’s probably a few metres from his death bed, and this is one of those unexplored facts of life I suppose, but what makes it work that way, I don’t know.

_LH_: Ok

_Matt_: I was talking to our shed coordinator recently

_LH_: Mmm

_Matt_: and he went to see this fellow who kept saying, “Well every time I come from the shed my body feels relaxed and I experience less pain and I sleep better as compared to before I joined the shed. I am treated with respect and feel I am at peace with the world” He kept telling him that at 82, he had recently found strength to volunteer at a local school and also started singing in his church, something he hadn’t done for years due to poor health. Being valued and respected I suppose promoted his healing and made him believe that despite the few aches, he is well and happy enough to volunteer and do other things he wouldn’t have done before he came to the shed. So you see I am not the only one who believes in the mind and body connection to wellness.

6.5.3 Medication is Important and so is Being-Valued-in-an-Everyday-World

Often in their narratives the men used this form of contrastive rhetoric of the experience of being valued and appreciated in opposition to painful memories of feeling unworthy and useless before joining Men’s Sheds, to make their claims about their health impacts. They also used the discursive formation of health as positive engagement with one’s environment and not just the absence of physical illness. This resonates with the definition of health adopted in this thesis that it is “the dynamic interaction between the life force of human beings and their environment” (Macdonald, 2005, p.82).
Paul (69), a morbidly obese man who walks with a slight limp, explained his health claims of social inclusion provided by Men’s Sheds by describing an incident where others had constructed him as ill and UNHEALTHY LOOKING. Paul raised his voice in parts of the story to make the contrast between his and the neighbours’ perception of his health, which was also deeply entwined with isolation and exclusion before coming to the shed. The knowledge that others believed him to be an UNHEALTHY LOOKING man challenged him and prompted the response, “I’M DAMNED IF I REACT NEGATIVELY TO THE CRITICISM THAT I AM AN UNHEALTHY LOOKING CHAP”. In other words, since joining the shed, Paul did not see himself as an unhealthy looking man.

LH: Could you tell me more about the importance of the shed on your health and wellbeing?

Paul: Well (P) (took a sip of hot cappuccino) as far as my personal belief to the health benefits of attending the shed I only very recently lost 6 stones, although I’ve joked about, you know, that the blokes abuse me by sending me on most errands and make me sweat off and such forth. Twelve months ago I weighed 25 stones because I was always lying on the couch feeling sorry for myself, as I often felt discriminated against if I dared walk around in the neighbourhood. My mind reacted very negative to any criticism about my body and I got more and more depressed as I experienced that I was not treated with respect hence I stayed indoors and kept to myself. When I joined the shed, I felt valued and I was treated with respect, which helped me go out more often and I have since done a successful operation [gastric banding] and joined a local gym. At 69, I feel like a youth and my energy levels have increased and I will not allow anybody to take away from me this good feeling. Now, let me tell you a story. It was (p) well about twelve months ago when I moved into this apartment, as it is cheaper and closer to the public transport. No one in the neighbourhood knows about my body transformation and how well I feel. Six weeks ago there were was a bit of a dispute amongst the neighbours here over someone smoking on the corridors and in the car park areas in the main building. Anyway they had a pretty altercation with a few young men ooh sort who throw their weights around in an unsanctioned makeshift gym in the common building, I suppose,
more or less in their 30s and they were refuting the allegations that they smoked in doors and they were defending their makeshift gym. Ah and there was a bit of shindig amongst the neighbours and such forth about it. Well I’m afraid I didn’t take it terribly seriously [notes that he probably would have done the same thing after seeing the value of exercise and social support on his health].

LH: Mmm.

Paul: But (p) the man who lives in ground floor and whom I came to understand as the chairman for the strata scheme ah (p) complained bitterly and complained to the others about UNHEALTHY LOOKING people supporting smoking and rowdy behaviour from youths who are posing a health hazard. I knew that in as much as he generalised his sentence, he was referring to me. Before I went to the shed, I would have felt discriminated and stressed by such comments, but not anymore. I am aware that when I come to the group of my supportive friends in the shed, I feel valued and appreciated. Yes, I am 19 stones, but I don’t see myself as unhealthy, rather I feel better about my overall health as compared to when I was not involved in shed. “I’M DAMNED IF I REACT NEGATIVELY TO THE CRITICISM THAT I AM AN UNHEALTHY LOOKING CHAP”.

Both Matt and Paul explained their understanding of the impact of social inclusion provided by Men’s Sheds through the use of selected narrative resources and contrastive rhetoric. Through the contrast with other reference points (discursive formations of before I joined the shed and after I joined the shed, feeling unvalued and discriminated against outside the shed but valued and treated with respect in the shed, they indicated the importance of being-valued-in-an-everyday-world.

The men used other narrative means to construct being-valued-in-Men’s Sheds. Eric (82) supplied an abstracted version of his life at the beginning of the interview. This ‘life abstract’ briefly chronicled the years prior to joining the shed (lines 11- 44) with the remainder an abstracted version of his life as a man involved in Men’s Sheds. The abstract is essentially a condensed version of what he told me in greater detail
during the in-depth interview. Eric’s organising theme for men’s health is being valued and the ‘life abstract’ ends with his commentary - “It doesn't matter at what stage in life, every man needs some form of validation from others and the shed does just that, it is important for men’s health.”

1 LH: Thanks Eric, for allowing me
2 the opportunity to come and talk with you
3 regarding Men’s Sheds
4 I would like to begin
5 by just asking you to tell me briefly about your life before you joined the shed
6 Eric: What I did and where I lived?
7 LH: Yes.
8 Eric: Yeah, well...
9 Including how I came to know about Men’s Sheds and all that sort of thing?
10 LH: Yep.
11 Eric: Well. I spent over 20 years of my working life in sales,
12 selling woodworking machinery and selling equipment
13 I worked in [town name],
14 Interesting I was born and grew up there
15 My father, who was also into carpentry
16 taught me that hard working earns you respect
17 LH: Mmm
18 So I worked hard to be a good salesman
19 and my efforts were always recognised
20 LH: Ok Mmm
21 Eric: I won a few awards
22 and always loved the feeling of being valued by other people
23 I enjoyed my work until I became redundant when I was 58
24 I moved from town to town doing casual work for the next 5 or so years
25 LH: Mmm
26 Eric: Things worsened when I couldn’t find any more regular work as a salesman
27 Companies preferred young people from universities
28 LH: Mmm
29 Eric: I ended up getting another job as a labourer in a factory in Sydney
30 It was good money but I didn’t like that job so much,
31 I then decided to retire, but this was the start of my troubles
32 LH: Mmm
33 I was always home by myself and really missed my social contacts
34 They were all retired and some moved interstate
35 I felt useless and would rather die
36 than to be subjected to extreme loneliness
37 I felt the society did not value me anymore.
38 LH: Mmm
39 Eric: Life became more and more stressful and I got depression
40 and could not stand being considered as an old man
41 I was only 66 and felt I could still do a lot for the society
42 I lacked the space, social support and camaraderie.
43 Luckily I heard about this Men’s Shed
44 and I came over here.

After this brief life review, Eric told me that the shed has provided him space, social support and camaraderie and he is enjoying his life. Throughout the conversation, Eric stressed the importance of feeling valued and appreciated by a group of his supportive friends in the shed to his general wellbeing. Eric made further claims on the health impacts of social inclusion provided by Men’s Sheds through reference to positive emotions. He made the point that his happiness, which he believed was the result of being valued and appreciated by others in the Shed, was the reason he was “well and strong.”

45 I’ve been coming to the shed now for 6 months
46 I’m enjoying my time here.
47 My name is up on the thing (notice board) to talk about the equipment.
48 I show the blokes how to use the machines for safety purposes.
50 LH: Mmm
51 Eric: It's great for me; it's great for all the fellows that are involved.
52 I'm sure they appreciate it.
53 The fellows I show how to do things they think it's great, they love it.
54 They tell me that we appreciate you going to all the trouble of telling us this.
55 LH: wow
56 Eric: I come over here to do that,
57 I didn't come over here to go crook on them if they made a mistake,
58 and they value me for that.
59 Most of the fellows we've got over here have expressed deep appreciation,
60 as opposed to how I felt useless after my retirement
61 LH: yeah
62 Eric: I feel I can use my talent
63 and the blokes utilise and value my knowledge and skills
64 It's a great honour for me
65 LH: Mmm
66 Eric: I feel good about myself
67 It gives me happiness to know that I have a valuable life
68 When I am happy, I feel content and satisfied
69 and free from ill-being
70 I do not suffer from any major illness, as I did soon after retirement
71 I think it is because I feel good and enjoy life
72 He tells me my cholesterol is ok
73 I've no trouble.
74 LH: Mmm
75 Eric: and I have no troubles with my heart or anything.
76 Happiness also makes me sleep well,
77 LH: Mmm.
Eric implicitly compared himself to those other men who presumably, after retirement or retrenchment feel unvalued and just sit at home and end up unhappy and ill. Once again being valued and appreciated in the shed is linked to this contrast:

78 Eric: I don’t sit at home and isolate myself anymore.
79 LH: Yeah.
80 Eric: I get up reasonably early every Monday and Tuesday to get here and greet everybody as they come in the door,
81 LH: Yeah.
82 Eric: I’m a sort of enjoying when I get to speak to all men
83 Even on days I do not come to the shed,
84 I do not sit at home and do nothing
85 I walk around and visit other sheds to see what other blokes are doing
86 because I feel that if you sit down and do nothing
87 and you’re retired and don’t have a companionship you’ll start worrying about things,
88 you know.
89 LH: Yeah.
90 Eric: Which, I know from my experience you will,
91 LH: Yeah.
92 Eric: and end up ill
93 Eric concluded the ‘life abstract’ by returning to the theme of being-valued-in-an-everyday-world and its relationship to general wellbeing.
94 Come to the shed and you will always feel valued and that will improve your general wellbeing.

This ‘life abstract’, as it turned out, contained references to narratives that Eric expanded on later in the interview. For example, he responded to my question about the importance of being socially included in the shed on his health by contrasting himself with a man he depicted as retired and lonely, and to a very sad man who do not feel valued and respected. In the life abstract Eric noted he “feels happy, content and satisfied to have a valuable life” (lines 63-65). Eric told me:
Eric: I know a man, who lives at the corner there [pointing outside], he is almost my age; he keeps to himself a lot, but he does talk to me because we have known each other for over 40 years. When I ask him how he’s going, he always says, “Oh gee, surviving, but I feel like old rubbish” He will always tell me about his poor health and is always having an operation or booked to see a specialist for something. The sad part is he does not have any friends visiting him and he has refused to join the shed, I think that is why he feels like old rubbish. But I do not feel like old rubbish. I feel useful because my network of supportive friends in the shed values me. At this age, I do not feel I can contribute to the society that much, you know, but I don’t feel useless and neither am I visiting different specialists every day. I still go and see the doctor, but not very regular or for a major ailment. As I’m saying the doctors have asked me to come for a medical check-up next week, but I know I’m well. I am happy and my health is good and this is the reason I will continue going to the shed as I do not want to be unhappy like some men out there who feel like old rubbish and all that.

Further into the conversation Eric referred to “stressful life and depression” he had mentioned earlier on (see lines 36-41 of the life abstract). The narrative device of contrastive rhetoric is used again to reinforce his theme of being-valued-in-an-everyday-world. Through receiving social support from other men in the shed Eric emphasised that you can do away with tablets and be able to “live a stress-free and fulfilling life”:

Eric: I’m not suffering from any major ailment and I’m enjoying life.
LH: Good.
Eric: Yeah, but I think I could be singing a different song if I did not join the shed as I often felt useless before I came here. I am happy that I made the decision to come here, yes I’m happy (P) but you’ll see a lot of men, you know, especially after retirement lonely and sad and that and, but as I’m saying see, like if I hadn’t come to the shed, like as I told you before, stressed and depressed, I thought I’d end up feeling like old rubbish and on a doctor’s operating table, or worse with depression, committing suicide, you know
LH: Yeah, so true

Eric: and that, maybe on loads of antidepressant tablets. The camaraderie in the shed is therapeutic, I wouldn’t be talking to you like this if it weren’t for the supportive environment in the shed, you know.

LH: Mmm.

Eric: Well I can now live a stress-free and fulfilling life without taking antidepressants.

To further ground his point Eric directly linked this talk to a short narrative about his late friend who relied on antidepressant tablets to manage his depression. At the same time Eric introduced another reference point - the refusal by his cousin to join the sheds, yet he suffers depression and is dependent on tablets, which ironically, he once overdosed in an attempt to commit suicide. Eric used these contrasts to convey to me his strong belief in Men’s Sheds to making participants feel cared for, esteemed and valued - feelings which facilitate coping strategies in response to life challenges.

Eric: As I said I had mild depression at the time, it was not good for my health, you know, so if you look after yourself by coming to a group of supportive friends in the shed and not wait for disaster to strike so that you do not depend on tablets like a late friend of mine who had depression and totally dependent on tablets lest he portrayed obsessive thinking and dangerous behaviour. I have a cousin who lives alone in [place], he is also dependent on tablets and I have invited him to try the shed, he keep saying “Oh yeah, don’t worry I will come soon my treatment is working”, yet he has overdosed on two different occasions and he keeps saying he is stressed and feels no one cares about him. I’m not saying he should not take his tablets, you know, yes he should, but the environment in the shed will definitely help with feeling cared for and valued and also help you feel relaxed, that’s why I attend the shed, you know

LH: mm

Eric: and after retirement, every man needs a shed, without it, you are incomplete.
6.6 **Chapter Summary**

This chapter presented the interpretation of the participants’ stories, and described themes and sub-themes, which were derived from both the thematic and narrative analyses. Two themes emerged from data analysis of the impact of social inclusion provided by Men’s Sheds on the health of the men involved. Within the first theme, being-valued-in-an-everyday-world, lies the sub-themes of the awareness of self and being valued and appreciated. In the next theme, being able to recover readily from life’s adversity, lies the sub-themes of reaping the benefit of the positive factors of the environment and being resilient. Throughout these themes, the meaning participants attributed to their experience of social inclusion provided by Men’s Sheds was revealed and made explicit. Further, the narratives of how it was for the participants to be socially included in Men’s Sheds have been presented. Presenting data in this way provided the means to derive a meaningful ontological interpretation of the impact of Men’s Sheds on the health of the men involved. In the next chapter, Chapter Seven, the ramifications of these themes and narratives will be discussed and suggestions will be made from the data with the intention of informing policy makers and health professionals on the salutogenic impacts of Men’s Sheds.
7 Chapter 7 - Discussion of Findings, Implications, and Conclusion of the Qualitative Study

7.1 Introduction

The hermeneutic approach holds that the most basic fact of social life is the meaning of an action (Little, 2008). As a philosophical approach, it seeks a deeper understanding of phenomena through analysing accounts of human experience in a particular context. It does this by asking, "what is the essence of the phenomenon" for those who have experienced it" (van Manen, 1990, p. 9). The findings from this study, presented in the previous Chapter, provide valuable insights for all the health professionals and service providers involved in men’s health that Men’s Sheds are protective the health and wellbeing of the men involved. These findings have implications for policy and practice and enhancing men’s health. This chapter begins by discussing the overall findings of this research and highlights the limitations of the study. The chapter then compares and contrasts the participants’ perspectives with the relevant literature. Some recommendations for policy and practice are outlined, and areas for further research are suggested. The chapter makes explicit the unique findings and contribution of the qualitative findings of this study. Finally, a conclusion to the qualitative study is provided.

7.2 Overview of Findings

The study participants described the impact of social inclusion provided by Men’s Sheds on their health from the context of their unique experience. In order to tell me about their individual experience of this phenomenon, participants needed to talk about the reasons for and background to their involvement in Men’s Sheds and to describe their experience of belonging to a network of supportive friends. Two themes emerged from the analysis of the participants’ lived experience of being socially included in Men’s Sheds. The themes were entitled: Being-valued-in-an-everyday-world and Being able to recover readily from life’s adversities. These
themes reflected a holistic picture of the health impacts of Men’s Sheds and included the significance of psychosocial resistance resources for health and wellbeing. This is groundbreaking as until recently men’s health has all too often focused on male pathologies, whether clinical or social, and psychosocial aspects and assets for health and wellbeing more or less neglected in the scientific context.

Participants in this study began by telling me their reasons of joining Men’s Sheds. The reasons were fairly typical of those reported by Ballinger, Talbot and Verrinder (2009) in their study. The majority of the men joined Men’s Sheds to seek the social support of other men while involved in meaningful hands-on activities. They liked the fact that Men’s Sheds provided them the space to belong and the equipment to utilise their talents in completing worthwhile tasks. The other attracting feature of Men’s Sheds was the relaxed and unregimented environment, where individuals felt equal and respected irrespective of one’s background.

Participants explained how their involvement in Men’s Sheds often followed stressful periods, such as retirement or retrenchment, for which they had suffered an array of psychosomatic disorders related to depression. As Paul explained that before he joined the shed, he “felt depressed, upset and ignored.” Luke also reported having had mild depression and “used to worry about things” that he could not do anything about. Simon, Paul, Fred, Eric and Charlie also reported the feelings of social isolation and depression attracted them to join the Men’s Sheds. Thus, Men’s Sheds helped these men deal with hostile environments in which some were constantly excluded and distressed, which often led to depression and other physical illnesses. The involvement with Men’s Sheds then, was to provide salutary factors, which enabled these men to be more capable of understanding their situation, to believe in finding solutions, and to experience a sense of coherence in their existence (Antonovsky 1996; Eriksson & Lindstrom, 2008).
7.3 Limitations

Recognising the limitations will assist the reader to understand the scope of this study and to evaluate the implications of the findings as presented. A limitation of this study is that I was able to recruit participants only from Sydney and Central Coast of NSW, Australia. The time and resource constraints of completing a Ph.D. necessarily limited my focus. Resource limitations and time restraints meant that only men involved in Sydney and Central Coast Men’s Sheds were targeted for recruitment, as this was where I was based and would practically facilitate the conduct of interviews. It is possible that this research study may have had variations in the findings in other social groupings of men involved in rural Men’s Sheds as well as those in other countries with different socioeconomic backgrounds. Therefore, limiting this study in these two geographical areas of NSW may have acted to conceal other social contextual influences.

As is standard in qualitative studies, small sample size is often quoted as a limitation, and, therefore, the findings cannot be generalised. The voices of only 15 men may have limited the meanings uncovered about the health impacts of social inclusion provided by Men’s Sheds. Moreover, other voices of all those involved in Men’s Sheds were not heard at all, such as those of indigenous men and those of recent migrants. Their voices were not excluded but may have missed inclusion due to their declining participation. Still, the presence of different voices may have unveiled a greater diversity of understandings and enhanced transferability. It can be argued however that generalisability is perceived and are not a legitimate criticism of qualitative inquiry. Transferability to a wider population was never the intention of this qualitative study. The findings of this study like other qualitative research studies aimed to “generalise to theory rather than to population” (Bryman, 2001, p. 282). Its purpose is not to predict behaviour or establish cause and effect, rather to illuminate and provide an interpretation to assist in understanding.

The nature of the participants in this study imposed some limits. From the start, the need to use purposeful sampling meant that the study was biased. This is, of course,
is another major criticism of interpretive phenomenology (Patton, 2005; Suri, 2011). However, as described in Chapter 5, the intention was to seek out the phenomenon, to find deep meaning and understanding from those who have experienced it. The process is necessary, and although it introduces bias, the researcher remained true to the philosophical underpinnings of hermeneutics and the findings should be measured on how these biases are managed through the interpretive process.

Readers may find the retrospective overtone of the study as limiting since it relied on participants’ recollection of their lived experience of social inclusion provided by Men’s Sheds. However, it is important to note that all the 15 participants were active members of different Men’s Sheds when the stories were told. Also, their stories are how they made sense of their lives and that is what I was being respectful towards.

My presence and my own ‘being-in-the-world’ brought its own limits. My research interest, my background, my experiences and my presuppositions all acted to limit the study in some way. However, the nature of hermeneutic study recognises unconditional imperfection of all effort to understand (Gadamer, 2004). I acknowledge that I am only ever contributing an element in the stream of understanding. This interpretation, therefore, is to be judged on believability and not on a presumed totality of the men’s experiences of social inclusion provided by Men’s Sheds.

Finally, in terms of the study as a whole, it has predominantly taken shape in and through my interpretive work. For example, not all parts of the participant stories were included. It is important to note, however, that of the several hundred narratives I interpreted, the ones I selected and reported are ‘illustrative’ of meanings heard in this thesis. However Heidegger (2001, p.6) warns that “we never come to thoughts, they come to us” This means that this study is limited as some thoughts just did not come to me, hence they may have been left unreported. Language, in particular, is an important factor when reporting data. I think and write in many languages hence at times I found myself running encountering the invisible boundaries created by language itself. For instance at times I struggled to express my
thoughts in the form of writing with which I felt comfortable that the message would be well understood. Even now, if I went back to re-write, these limits would surface, and I would find myself changing the words and paraphrasing sentences.

In summarising, although there are limitations to the findings, the knowledge derived from this study substantially adds to our understanding and what is currently known about the impact of Men’s Sheds on the health of the men involved and can inform strengths-based planning for men’s health. The next section explores the overall findings of this study in relation to the relevant literature. I argue that such an exploration enables a shift of focus from men’s pathology to men’s health and thus provide relief from the reductionism of medicine and the cultural constructions of masculinity. Therefore, I agree with Macdonald (2005; 2011) that Antonovsky’s salutogenic theory offers an important framework for researching men’s health, which has implications for the development of men’s health policy.

### 7.4 Discussion of Study Findings

According to van Manen (1990, p.9), hermeneutic phenomenology “attempts to gain insightful descriptions of the way people experience the world pre-reflectively”. Unlike other forms of qualitative inquiry, it does not offer theory to explain the world, but rather it offers “the possibility of plausible insights that bring us in more direct contact with the world” (van Manen, 1990, p.9). Hermeneutic phenomenology, therefore, interprets the human states of Being-in-the-world and has always had a special role in furthering knowledge. For the men in this study, hermeneutic phenomenology had an important role to play. First, through reaching an understanding of the reality of being socially included in Men’s Sheds. Secondly, it created space for participants to tell their stories about the phenomenon of Men's Sheds and the perceived impact on health and wellbeing.

For the participants, the experience of ‘Being’ socially included in Men’s Sheds was not only personal but also was transactional, social and profoundly holistic. This is in keeping with Heidegger’s call to the fact that a human being cannot be taken into
account except as being an existent in the middle of a world amongst other things (Warnock, 1970). The ontological question of ‘what does it mean to be socially included in Men’s Sheds?’ is also essential in viewing the men as being existent in the middle of the world. As discussed in Chapter 4, Heidegger (2008b) believed human existence is defined by Being-in-the-world. ‘Being’ is always capitalised to denote that primordial state that enables everything else to come into existence.

Accordingly, Being socially included in Men’s Sheds literally means Being ‘there’ and ‘there’ means Men’s Sheds. I understood that Being socially included in Men’s Sheds is not extrinsic to the participants’ existence. In other words, they are not isolated individuals who enter into a relationship or subsequently interact with the world. I understood the participants as Being involved in Men’s Sheds. Thus, their presence is considered within the framework and against the backdrop of the life-world into which they were inserted (Heidegger, 2008). As such these men do not exist in Men’s Sheds without the other people, friends and shed coordinators including other service providers. The study showed that the phenomenon of what it is like to belong to Men’s Sheds was a health-promoting experience for the participants.

The study showed that participants felt a belonging to in a completely supportive world. They found the environment to be caring, loving and providing esteem for every man. This is evidenced in the stories of Paul, Mike, Joe, Carlie, John, Phil, Matt, Peter, Ron, George, Eric, Simon, Adam, Stan and Fred. For example, Paul described his feeling and said he felt appreciated, which helped with his self-esteem, coping with difficult issues, depression, and overall sense of wellbeing. This theme indicated that participants felt profoundly cared for, loved and esteemed in their new world. This was borne out by Paul’s story and Mike’s story. According to Paul, before he came to the Men’s Shed he led a stressful life and experienced that he was not valued. But his stressful life was disrupted after the involvement, and he felt being valued and that his life was now normal. It is interesting to note that the concept of ‘being’ is a key concept in Heidegger’s phenomenology.
The concept of ‘being’ is relevant to this theme as the participants’ Being-valued-in-an-everyday-world (in Men’s Sheds) had a positive impact of their health and wellbeing. Being-valued-in-an-everyday-world began with a self-awareness that then developed into a comforting perception of Being appreciated and respected. The self-awareness of participants was an exceptional type of consciousness in that it was not present before their involvement in Men’s Sheds. This is evident in their stories as most had reported feeling unvalued, especially soon after retirement or retrenchment. It has also been acknowledged in men’s health literature “in most societies after retirement or especially retrenchment; men experience that they are not valued (Macdonald, 2005, p.107). As an example, Mike related that his involvement in Men’s Shed led him to a new awareness about his self-worth. Prior to coming to the shed, he was isolated and felt like no one cared about him hence he lost his sense of Being-in-the-world as a valuable man. This is also evident when George said, “the whole experience was like being taken from a place where everyone sees a useless old man and placed in a world where people see a useful human being.”

Simon’s feeling of being socially included in the shed was expressed as a self-conscious emotion. He recalled that engagement with supportive friends in the shed led him into a new awareness of his self-worth. Heidegger (2008) used the example of a hammer when building a house to distinguish three modes of engagement that people have with their surroundings. When people use a hammer to nail wood, there is no need for focal awareness of the tool. In other words, the user tends not to think of such a tool and its purpose in any abstract or theoretical way. This is because the skills and practices the user brings to the activity are so familiar to them that they are simply unaware of their experience, which Heidegger referred to as being ‘ready to hand’ activity. It is only when there is an issue, either good or bad with the hammer that the user is forced to contemplate the hammer in itself and theorise about it in an abstract manner and Heidegger referred to this as the ‘present at hand’, or theoretical knowing.
The present-at-hand mode is entered only when people detach themselves from an ongoing practical involvement in a project at hand. For the men, it was the sudden awareness that belonging to a supportive network of communication made them feel cared for, esteemed and valued in the everyday. Belonging to Men’s Sheds brought the awareness of being in an everyday-world, and participants felt their life did not continue on as before they joined. The use of the term ‘everyday-world’ while somewhat clumsy is quite deliberate in that the experience of the participants was fundamentally one of contrast from feeling not supported or valued everyday, which moved them from one form of engagement to another, the everyday feeling of positive affirmation. From an awareness comes understanding and the participants were then moved to the third form of engagement, present-at-hand, where they reflected on the meaning of Being socially included in Men’s Sheds. This is apparent in John’s story. The acknowledgement of his ‘cabinet-making skills’ developed a new awareness of being valued in his everyday world, and like many other men in this study he felt his life did not continue as before.

For participants, the awareness of being valued, which happened following their involvement in Men’s Sheds was an objective self-awareness instead of a subjective self-awareness. According to Carver (2003), self-awareness occurs as a representation of our self-abstract to think about our thoughts and experience, and judge our ideas and actions in light of abstract goals and standards. In other words, it occurs when conditions are created in the environment, which allows human beings to remind themselves of their status as subjects or objects in the world. Furthermore, Duval and Silvia (2001) believe that awareness can be dually focused either inward toward oneself or outward toward the environment. When awareness is directed inward toward the self instead of outside toward the environment, this state of consciousness is described as objective self-awareness. Thus the men’s awareness of being valued in Men’s Sheds was an objective self-awareness and was revealed when other supportive friends become present in the environment and the participants received and perceived feedback from the environment regarding their practices, attitudes and attributes.
George, Simon, Matt, John, Paul, Phil and Fred experienced their self as objectively ‘useful’ following involvement in Men’s Sheds and they began consciously to think about their self-worth and that the group offered them positive affirmation of themselves, which distinguished them from lonely and socially isolated men. According to Duval and Silvia (2001) attention cannot be simultaneously focused inward and outward and that certain stimuli in the environment will always cause the inward attention. These authors also emphasise that when a person is objectively self-aware, they become acutely aware of those personal characteristics that most distinguish their situation from others.

Having their technical and personal skills acknowledged made the participants feel as if they were the only ones with such a characteristic. They became objectively self-aware and focused attention on that characteristic and perceived themselves as they thought the group of their supportive friends perceived them. This state of objective self-awareness was generated when participants felt that their being-in-the-world might be evaluated along such salient dimensions. This is evident in the stories of George, Simon, Matt, John, Paul, Phil and Fred. According to Duval and Silvia (2001), objectively self-aware persons are more likely to attribute the source of the situation to themselves. The focus of attention of the participants in this study was drawn to the reality of belonging to a group of supportive friends, which offered them positive affirmation of themselves and acknowledged their personal and practical experiences, for example skills, in carpentry, and exhibited salient characteristics that distinguished them from the socially isolated men who experience that they are not valued.

In this study, the occurrence of objective self-awareness of the participants can be understood in two ways. Firstly, theirs was directed awareness and the focus was exclusively on the self. For instance, Phil said he was thoughtful that his friends in the shed made him feel of considerable importance. In this sense, he and other participants in this study were the objects of their own attention, and they perceived themselves as they thought others perceived them. Secondly, the resultant objective self-awareness induced an automatic and controlled self-evaluation process, which
elicited comparisons between the self now and before joining Men’s Sheds. Such comparison, for example, was demonstrated in the stories of George, Matt, Simon, John, Paul, Phil and Fred. George said he “felt useful and human again”. All these experiences had moved these men towards the positive end of the health and wellbeing continua.

To unravel the mystery of health (Antonovsky, 1979), to understand the movement towards the positive end of the health and wellbeing continuums for the participants in this study - a starting point could be using Morgan and Ziglio (2010) asset model. The Morgan and Ziglio model emphasises recognising the vital assets and general resistance resources as described by Antonovsky (1979; 1987) in a population under study. Overall, the results of the present study suggest that social support and connectedness followed by purpose in life, participation in activities, and self-esteem seem to be the most vital psychosocial resistance resources provided by Men’s Sheds. These four psychosocial resistance resources made the themes Being-valued-in-an-everyday-world and Being able to recover readily from life’s adversities. Together these themes are characterised by the expression: regaining resistance resources and sense of meaningfulness to maintain health.

7.4.1 Social Support and Connectedness

Social support and connectedness have previously been described as a fundamental psychosocial resource for health and wellbeing. Indeed this was confirmed by the findings of the present study as well. On the whole, the participants tended to report positive self-perceived health and wellbeing as a result of the support they received from other men in Men’s Sheds. As an example, George in his story referred to feeling supported and having someone to confide in as the major factor. He described access to this resource as enabling him to manage his situations better and improved his health and wellbeing. This was evident in most participants’ stories in this study.
Focusing on the men’s supportive relationships in the sheds, the relational matrices of the narratives produced a number of positive connections. Situating one’s self at the centre of such a positive network of relationships suggests relatively high levels of connectedness and social support. The importance of social support to people, in this case to men, is consistent with other studies (Hall et al., 2007; Lyons, Hosking, & Rozbroj, 2015; Rhodes et al., 2013). Participating in Men’s Sheds allows men to experience being cared for and valued, which positively nourishes their health. As Macdonald (2005) acknowledges, human wellbeing is nourished not only by physiological needs, but by strong positive social ties such as these, together with the resultant sense of trust and the knowledge that one is being cared for and valued.

The participants reported that the supportive engagement with others in the sheds and the experience of being cared for and valued-in-the-everyday nourished their wellbeing and helped them flourish. Morgan and Ziglio (2010) acknowledge that building an efficient evidence base for a salutogenic asset model for public health should concentrate on asking the question - what produces overall levels of wellbeing, making people flourish? Indeed, being-in-the-world feeling cared for, appreciated, loved, esteemed and valued had a powerful protective effect on the health of these men and made them flourish. This finding is consistent with the work of Macdonald (2005; 2006; 2013) who has consistently acknowledged the importance of social relationships in fostering men’s health.

Research from social support interventions show social support protects individuals from the deleterious physiological consequences of stress through the neuro-endocrine and psycho-immunologic pathways (Bogossian, 2007; Uchino, 2006a). According to these studies, perceived social support modulates the stress response. Reviews of the international literature have also shown that close personal ties (actual or perceived) are associated with better health outcomes (Bowden, Goddard, & Gruzelier, 2010; Maunder et al., 2012a; Pietromonaco, Uchino, & Dunkel Schetter, 2013; Uchino, Bowen, Carlisle, & Birmingham, 2012).
Enhanced autonomic tone is a possible pathway by which perceived social support preserves cardiovascular health (Cosley et al., 2010; Lache, Meyer, & Herrmann-Lingen, 2007). Lack of social support during perceived threat or stress is reflected in central alterations that increase sympathetic outflow (Hjortskov et al., 2004). Five recent studies analysing HRV have shown that belonging to supportive network is associated with increased HRV (Gouin et al., 2014; Hopp et al., 2013; Kok & Fredrickson, 2010; Maunder et al., 2012a; Utsey, Abrams, Hess, & McKinley, 2014). In these studies, social support was found to increase resting HRV, indicating reduced sympathetic nervous system (SNS) and increased vagal activity. Linked to social support and connectedness was the belief that Men’s Sheds helped reduce the stress levels including depression on the men involved. Although it was beyond the scope of this qualitative study to test these associations, the main question to be answered is whether Men’s Sheds can enhance these physiological changes.

### 7.4.2 Purpose in Life

Purpose in life is a concept based on the premise that human beings are “motivated by a ‘will to meaning,’ an inner pull to find a meaning in life” (Frankl, 1963). Having a purpose in life has been cited consistently as an important psychosocial resource for health and wellbeing (Hill & Turiano, 2014; Kim, Strecher, & Ryff, 2014). Purpose in life promotes wellbeing by providing a sense of personal consistency, which may buffer the negative consequences of perceived change. The experiences of being valued, together with the resultant sense of trust and affirmation of one’s efforts provided the men in this study with a sense of purpose. Mike’s story (see wherever he spoke) is an exemplar of how the knowledge and experience of being valued made his “life meaningful again”.

A substantial research literature suggests that having meaning and purpose in life is a principal component of subjective wellbeing (Shin & Steger, 2014; Steger, 2012), and studies have demonstrated its association with and resilience (Alim et al., 2008; Burrow, Sumner, & Ong, 2014), and physical and cardiovascular health (Boehm & Kubzansky, 2012; Koizumi, Ito, Kaneko, & Motohashi, 2008). As already stated, most
men joined the sheds after periods of psychological distress including depression and some had given up on life. The awareness of being valued and respected by other men was a driving force and strength that contributed to their ability to meet and handle adversities. For Mike, Stan, Matt and Charlie, purpose in life emerged as a key factor associated with both resilience and recovery from various health conditions.

Purpose in life became the primary motivational force to want to live and overcome life challenges in spite of stressful conditions. All the participants described undergoing stressful experiences such as grappling with the consequences of unemployment, retirement, deaths of loved ones as well as loss of other human and material resources, and they reflected on their adversity, yet had a purpose in life and a positive view of the future. For example, despite suffering from rheumatoid arthritis and losing his close friend at the same time, Ron at 84 years had a lot of plans for the future. Like other participants, the supportive environments in the shed gave him a sense of purpose or what Antonovsky (1979) called a ‘sense of coherence’. Even in old age, most participants showed a very positive outlook on their future and were looking happy and healthy. In other words, Being-valued-in-an-everyday-world led to Being able to recover readily from life’s adversities – these being the two themes, which emerged in this study. Such findings provide insights into the vital psychosocial resistance resources provided by Men’s Sheds. However, future research must explore the association of this purpose in life with quality of life, longevity, including such indicators as HRV, inflammatory markers and cortisol levels.

7.4.3 Participation in enjoyable and meaningful activities

Moreover, findings from this study confirm that participation by men in enjoyable activities acts as an important central resistance resource. This is in line with previous research, suggesting that participation in social activities is a central component in the creation of health and wellbeing (Cornwell & Waite, 2009; Flatt & Hughes, 2013; Ichida et al., 2013; Young & Glasgow, 1998). However, Men’s Sheds
not only provide men with an opportunity to participate in general social activities. Rather, the men in this study revealed that the sheds are a source of enjoyable and meaningful activities. In this way Men’s Sheds provided the participants with engaging activities, which positively impacted upon their health and wellbeing, a finding consistent with the study by Ormsby, Stanley and Jaworski (2010). Previous research on Men’s Sheds has also revealed that men enjoy regular and systematic, hands-on activities (Ballinger et al., 2009; Golding, Brown, Foley, Harvey, & Gleeson, 2007). This lends weight to the view that Men’s Sheds provide a hanging out space for men to connect with other men while retaining a sense of being at ‘work’.

For men, the importance of work goes beyond providing income. As acknowledged by Macdonald (2005), men see their self-worth as being related to their work. According to Gradman, (1994, p.105), “work enables a man to meet the social norms for masculine attitudes and behaviours”. It was interesting to observe that five participants were unemployed and were actively looking for paid work, yet they repeatedly likened Men’s Sheds to ‘work’ because it provided them with hands-on activities they enjoyed doing. For the retired men, Men’s Sheds provided meaningful male specific activities that they used to manage the loss of work due to retirement. This fostered their sense of masculinity and impacted positively on their health and wellbeing.

These findings confirm Antonovsky’s suggestion of the importance of qualitative factors of work as a central resource for health and wellbeing. It is apparent that having access to workshops equipped with machinery and tools along with expertise to support men to do meaningful male-specific activities that they enjoyed provides opportunities for personal development, skills and a sense of mastery. All these salutary factors can enhance one’s health and wellbeing. Previous research has revealed that work confers a sense of being in control of one’s life (Marmot, 2004; Thompson & Prottas, 2006; Wilkinson & Marmot, 2003). More so, doing things that one enjoys and values is a salutogenic factor (Macdonald, 2005).
7.4.4 Self-Esteem

The opportunities for the participants in this study to form and maintain relationships with their supportive friends in Men’s Sheds protected and enhanced their self-esteem. Participants’ self-esteem was affected solely by the tone of the feedback that the men received for accomplishing various hand-on projects or task in Men’s Sheds. For instance the positive feedback that Adam received for making his first dovetail joint after 50 years enhanced his self-esteem, and so was the praise he received for preparing tea for other men and putting up the toilet roll. There were many times when participants reported that the positive feedback from other men increased their self-worth leading to greater happiness. The strong association between self-esteem, health and wellbeing needs little justification, with vast amount of evidence suggesting that the constructs conceptually overlap (Hewitt, 2009; MacInnes, 2006).

In line with salutogenic thinking, social support, purpose in life, participating in meaningful activities and self-esteem were resistance resources, which increased the sense of coherence for men involved in Men’s Shed. These resources were manifest when the participants experienced **Being-valued-in-an-everyday-world**, which ultimately increased their sense of coherence to be able to recover readily from life’s adversities. Salutogenically speaking, belonging to the Men’s Sheds was a health building experience because in spite of the challenges these men faced, some considered catastrophic, they were able to adequately deal with them. For example, most men were grappling with the consequences of unemployment, retirement, loss of other human and material resources as well as chronic health problems.

Men’s Sheds provided the capability for the participants, many who felt hopeless before joining the shed, to positively look at life alongside successfully managing the many psychosocial stressors they encountered. In this case participating in Men’s Sheds increased the participants’ comprehensibility, manageability and meaningfulness, these being the three elements that form the concept of sense of coherence (Antonovsky, 1987). Social support, purpose in life, participating in
meaningful activities and self-esteem, which were resultant of **Being-valued-in-an-everyday-world** were resistance resources that reinforced the sense of coherence in these men. Persons with a strong sense of coherence have capacity to respond to stressful situations, hence these men reported **Being able to recover readily from life’s adversities.**

7.5 **Regaining Resistance Resources and Sense of Meaningfulness to Maintain Health in the Sheds: Concluding Discussion**

*My father used to tell me that predators generally attack those small animals moving alone. I became a loner and had no one to talk to, but since I joined the shed, I have regained companionship and learnt new skills and life is meaningful again. (Mike, 75)*

In this study I have examined the lived experience of being involved in Men’s Sheds and how these experiences influence the health and wellbeing of the men involved. For the participants in this study, Men’s Sheds increased the capacity of those involved to deal with the most negative and hostile forces in their environment. I began this study with my father’s story of facing the most negative and hostile forces and how belonging to a supportive group fostered his wellbeing. The lens of salutogenesis theory and the theory of cooperative strategies involving sociological evolution and physiological natural selection literally and metaphorically opened my eyes to a deeper understanding of my father’s survival. In Bourdieu’s words (1995, p.35), it was my “forgotten history” which inevitably intersected with the present - the importance of in-group cooperation to survival and the importance of social inclusion provided by Men’s Sheds on the men involved. As I reflected, I also engaged my sense of identity, as the son of a man who valued in-group cooperation and possibly possess the genetic predisposition to belong to cooperative groups. I learnt from my father to belong to social groups and I value in-group cooperation. With this understanding comes a sense of resolution and acceptance - an awareness of finding my place in understanding my genealogy and connecting it with the storytellers in this study.
To end this final section of the discussion chapter, I revisit Mike’s story and weave together the central theoretical concepts that I have drawn on in my analysis of the participants’ experiences of social inclusion provided by Men’s Sheds as inherently regaining resistance resources and sense of meaningfulness to maintain health. As I have discussed throughout this chapter, the social inclusion provided by Men’s Sheds offered the participants psychosocial resources (i.e., social support and connectedness, purpose in life, participation in activities and self-esteem), which maintained their health and wellbeing. I argue that social inclusion a result of in-group cooperation is a vital GRR and thus intrinsically linked and critical to the maintenance of health. I also argue that in order to maintain their health and wellbeing, these men behaved cooperatively, and supported each other, which can be described as ‘Tit For Tat’ (Axelrod, 1981), and was the most successful strategy that provided these men with psychosocial resistance resources to maintain their health.

### 7.5.1 Mike’s Story Revisited

The use of social inclusion provided by Men’s Sheds to maintain health was embedded in Mike’s everyday experience. To face his environment, social inclusion was the most useful solution for him. He learnt the strategy from his father, who had been trained by his own father. As a World War 1 veteran, Mike’s grandfather knew the importance of cooperative strategies, and he emphasized the value of belonging to a strong support network for survival. This patriarchal lineage of valuing social inclusion was embodied in Mike’s sense of identity as a man and may have provided the basis for cultural transmission in a process involving sociological evolution and physiological natural selection. Integral to his sense of self, Mike was resolute in his belief that belonging to a Men’s Shed was the best strategy for regaining friendships and enhancing his self-esteem. He was pragmatic in his understanding that these resources were vital in building his health and making a full recovery from depression. Thus he said:

> I saw it from my father, and I think it is in my blood too. I do better when I am working alongside other like-minded men. We value and support each other here and together we
do amazing things and we are all enjoying it. All men feel supported here, ... when one is down; the rest will pick him up, we are here for each other mate. (Mike, 75)

With the supportive environment in the shed, Mike’s life became meaningful again because he was instinctively comfortable in this setting. It is important, however, to note that this was not a simple self-benefit, but one experienced by all members of his group. In his theory of cooperation, Axelrod (1981) states that individuals belong and cooperate for a higher prize. He describes ‘Tit For Tat’ as the most successful strategy in in-group cooperation when compared with self-benefit dilemma. Mike’s story reveals that the benefit of belonging to the shed was for all the men involved and this narrative corresponds with other men’s stories. I argue in this study that while the supportive environment in the shed linked Mike to positive memories of his past-memories and feelings that enabled him to carry a sense of self and place with him into the present context, it is possible the genetic predisposition to belong to a social supportive played a major role to support his health and wellbeing.

As discussed in Chapter Three, belonging to cooperative strategy to face their environment and survive was the most useful solution for our ancestors. It was those who learned how to live in groups and cooperate who were successful hunters, protected themselves and their families and survived when others perished. In other words, belonging to strong and cooperative groups was the strategy that allowed our ancestors to pass on that very genetic disposition to belong to supportive networks in order to be safe and survive even in perilous environments.

Antonovsky’s salutogenesis focuses on factors that support human wellbeing rather than on factors that cause disease. While the decision to take a salutogenic approach in explaining Mike’s genetic disposition to belong a supportive network may be innovative and relatively unexplored in application to theory of cooperation, it can be argued that cooperation for the group’s benefit is in and of itself, a salutogenic approach. There are of course in-built relationships that exist between the resources the group reap from belonging to cooperative strategies and related systems and their health and wellbeing.
There is a burgeoning wealth of literature on the health impacts of resistant resource gained from belonging to supportive groups (Grav, Hellzén, Romild, & Stordal, 2012; Taylor, 2011; Thoits, 2011; Vassilev, Rogers, Kennedy, & Koetsenruijter, 2014), which reflects the growing awareness in both research and policy of the importance of social inclusion for the health and wellbeing of the population. At both an individual and societal level, social inclusion is an important determinant of health, which has an influence on self-esteem, coping effectiveness, depression, distress and sense of wellbeing (Berkman & Glass, 2000). Findings from a substantial body of literature suggest that social inclusion is an important vehicle for enabling people to participate in community activities and sustaining the quality of people’s lives (Fritz & Koch, 2014; Huxley & Thornicroft, 2003; Shortall, 2008; Simplican, Leader, Kosciulek, & Leahy, 2015).

While there is a great deal of literature which argues the importance of social inclusion for the wellbeing and health of the populations, there is strong evidence suggesting that modern social and technological developments have led to the erosion of social interactions in natural settings in favor of online social networks (Amichai-Hamburger, Kingsbury, & Schneider, 2013; Ellison, Steinfield, & Lampe, 2007; Leung & Lee, 2005; Rozzell et al., 2014; Shah, Schmierbach, Hawkins, Espino, & Donavan, 2002). This declining social interaction in natural settings has been witnessed in many social organizations and may be linked to broader epistemological challenges about the authenticity of knowledge, the confidence in the power of science and the capacity of population health experts to understand the importance of events that occur during co-presence and by virtue of co-presence. It is beyond this thesis to explore men’s social and cooperative behaviour, but only used in this discussion to understand its impact on men’s health.

A sociological understanding of occasions is here advocated - when people meet, the social organisation is the central theme, “but what is organised is the co-mingling of persons and the temporary interactional enterprises that can arise thereof” (Goffman & Best, 2005, p.1). The ultimate behavioural materials are the verbal and
non-verbal cues that people continuously feed into the situation, whether intended or not, which as discussed in Chapter Three can affect states of mind and body through psychoneuroimmunology. I argue this makes interactions in natural settings salutogenic. It is for this reason Men’s Sheds motto suggests that “Men don’t talk face to face; they talk shoulder to shoulder” (AMSA, 2014). Co-presence is essential for the shoulder-to-shoulder interaction.

It was the co-mingling of Mike with other like-minded men and the interactional enterprises that provided him with resistance resources that reinforced his sense of coherence. As argued throughout this study, persons with a strong sense of coherence have capacity to respond to stressful situations; hence he found life meaningful again and above all, he fully recovered from depression. The men in this study appear to be sharing the same story as Mike. They made sense of belonging to Men’s Sheds and thus constructing it as providing resistant resources to maintaining their health and wellbeing.

Men’s Sheds are part of a men’s health movement that is developing, or has developed based on a strengths-based approach to men and their health and a social determinants of health perspective. As argued throughout this thesis, there is value in adopting the aforementioned perspectives in men’s health. It is consistent with the Australian National Male Health Policy and is in harmony with the social determinants of health approach promoted by the WHO. Men’s Sheds focus on the social determinants of men’s health, including the influence of supportive environments in the maintenance of the health of the men involved. The men in this study felt that Being-valued-in-an-everyday-world by their friends in Men’s Sheds led to Being able to recover readily from life’s adversities. This process was salutogenic and led them to regaining resistance resources and sense of meaningfulness to maintain health.
7.6 Implications and Recommendations

This study provided a rich interpretation of the meaning of social inclusion provided by Men’s Sheds attributed to the experience of the men involved and the impact it had on their health and wellbeing. Interpretive inquiry is not generalizable in the traditional sense, yet the implications for policy and practice that have arisen from the men’s experiences in this study are significant and resonate in regard to similar groups involved in Men’s Sheds or related programs in Australia and overseas. Although the implications detailed here relate to health practitioners involved in men’s health much of the discussion is directed to policy makers specifically. It must be repeated that this study was neither about health practitioners nor policy markers, but on how experiences of social inclusion provided by Men’s Sheds impact on the health of the men involved. Therefore, implications for policy and practice must not be interpreted as judgments on health professionals. However, the suggestions that I make are drawn from the interpretations of the participants in this study. The findings provide unique insights for planning, developing and implementing men’s health policies to ensure programs and practices are influenced by strengths-based approaches to males and their health, adding significant evidence on which to base men’s health practice that needs to be enhanced by further research. This section discusses these implications and provides a number of recommendations aimed at improving men’s health practice.

The increasing male mortality from preventable diseases in all industrialised countries requires health professionals to broaden their knowledge of factors that aim to foster the health and wellbeing of men. After retirement or retrenchment, some men experience social isolation, which has been proven to be strongly detrimental to health. Cooperative strategies for self-provision of social support, such as Men’s Sheds are crucial for men at risk of social isolation and have strong benefits for the general health and wellbeing of the men involved. Although this study relates to Men’s Sheds, the principles can be relevant to other programs, which provide social inclusion for the populations involved, be it men or women.
This study draws a holistic picture of Being-in-the-world as a man involved in Men’s Sheds, to provide health professionals and policy makers with the opportunity to understand the experience and relate it to practice. Participants’ voices, therefore, are added to help guide further research practice. These findings suggest that social inclusion is an important health need for men. In order to provide for this need health practitioners and policy makers require knowledge about the social determinants of men’s health. As public health policy makers comprise the largest group of health professionals, they are well placed to develop and sustain meaningful policies, which adopts a strengths-based approach to men and their health and a social determinants of health approach to men.

The study showed that certain experiences of social inclusion provided by Men’s Sheds such as being able to recover readily from life’s adversities and being-valued-in-an-everyday-world were shared among participants. Although these insights are not new (Berkman & Glass, 2000; Cobb, 1975; Macdonald, 2005), this study helps to put them in context. The findings encourage health professionals to extend their knowledge about men’s health beyond a disease-centred perspective to holistic view of health. That is, men’s health must include the biological but also encompassing consideration of the social determinants of health.

This study identified that participants felt Men’s Sheds offered them a salutogenic environment where they were valued and appreciated by their friends in their everyday world. The findings suggest that it is imperative that health professionals be aware of the impact that a socially inclusive environment can have on men at risk of isolation and exclusion. The study highlights the need for health professionals to consider factors, which foster health (social inclusion provided by Men’s Sheds in context of this study), and incorporate them into health promotion plans at a PHC level.

Findings from this study expand the health professionals’ knowledge of men’s experiences with Men’s Sheds and can potentially influence PHC interventions
targeting men. Participants had much to say about the benefits to their health of the intersectoral collaboration between Men’s Sheds and other service providers. They also spoke at length about ‘participation’, which is an essential element or pillar of PHC (Macdonald, 2013). Participation was clearly about power sharing in the Men’s Sheds. Even visiting professionals did not have more power than the men in the sheds as is normally the case in the curative sector, but the power was equally shared. This is an important finding to remind health professionals, especially those from the curative sector, not to see Men’s Sheds as alternative clinics for men, where power is embodied in and comes with the day-to-day rational-scientific practices associated with their work. Rather, practitioners must ensure the power is equally shared and do not medicalize the sheds (Ballinger et al., 2009). The philosophy of Men’s Sheds is health buffering and not curative hence policy markers and health planners need to make this distinction explicitly so that sheds are not seen as alternative clinics.

The findings from this study provide valuable information and knowledge for those involved in men’s health thereby enriching Australia’s evidence-based data resources with which to inform programs and practice. The findings also represent possible areas for further research.

7.7 Conclusions and Recommendations for Further Research

This study sought to explore men’s experiences of participating in Men’s Sheds. The purpose of this research was to develop an understanding of the impact of Men’s Sheds on the health and wellbeing of the men involved. Underpinned by the philosophical hermeneutic of Gadamer (2004) as well as the ideas of van Manen (1990), this study brought to light a deep ontological understanding of the lived experience of the phenomenon. The findings of this study have provided insights into the world of men involved in Men’s Sheds. The social inclusion provided by Men’s Sheds enabled the men involved to regain resistance resources and sense of meaningfulness to maintain health. This expression of regaining resistance resources
and sense of meaningfulness to maintain health came from the themes Being-valued-in-an-everyday-world and Being able to recover readily from life’s adversities.

For these men, Men’s Sheds offered them supportive environments where they felt valued and appreciated by their friends in their every-day-world. These men drew on the strength of their supportive friends in Men’s Sheds to enhance their self-esteem and overcome their everyday struggles in life. The salutogenic environment offered by Men’s Sheds was reported to reduce stress levels and improve psychological wellbeing of the men involved. The strong ties with other members in good and bad times kept them grounded with a sense of resourceful strength and provided a spring board of resilience to face adversities. The theoretical analysis of these the themes leads to a linkage with the psychoneuroimmunology (PNI) theory (Ader, 1995), an association that requires further research to establish clearer biopsychosocial parameters.

Further research is needed to fully understand the interaction of biopsychosocial variables in this multidimensional process of being involved in Men’s Sheds; however, this research contributes novel viewpoints and significant findings related to the influence of social inclusion provided by Men’s Sheds from a psychosocial perspective as perceived by the men involved themselves. Therefore, the specific processes governing psycho-neuro-immune-endocrine interaction need further research to achieve the required level of understanding for use as a reliable salutogenic venture.

It is my hope that other health professionals who read this work can appreciate and be informed by the interpretations presented in these two themes. Indeed this study has helped me as a researcher and a nurse to understand the experience of Being socially included in Men’s Sheds. I leave the reader with this thought from Paul, one of the participants in this study who said:

I think I would have died if I did not come here; the environment is very supportive and from day one life started to make sense, and I am coping better now. (Paul, 69)
Health professionals involved in men’s health need to be aware of, and not underestimate, social determinants of health and their impact on the lives of men. This study has aspired to contribute to the evidence base of men’s health and further supplement the development of a salutogenic theoretical framework to guide this vital field. However, it is clear that future research in Men’s Sheds can make more use of multifaceted methods, pragmatically designed to test multiple variables to compliment these findings and gain a fuller understanding of the biopsychosocial impacts of Men’s Sheds. In this matter, prospective research designs would be valuable. In the next two chapters, a one-group pre-post study is examined to attempt a partial evaluation of whether or not belonging to Men’s Sheds has an effect on cardiac autonomic function and cortisol levels.
8 Chapter 8 Quantitative Methods

8.1 Introduction

Previous chapters (chapters five, six and seven) covered the qualitative component of this thesis, including the processes of participant recruitment, data collection as well as the findings of thematic and narrative analyses. As has been demonstrated in Chapter four, mixed-methods research that combines both qualitative and quantitative approaches was adopted as the research methodology in this thesis. By reviewing relevant literature on the health impacts of Men’s Sheds in Chapter 3, it was found that our knowledge regarding the interactions among a range of variables associated with Men’s Sheds has not yet been adequately conceptualised, measured, tested or understood. Moreover, the qualitative study of this thesis showed the potential of Men’s Sheds in reducing stress levels and improving the health-related quality of life (HRQoL), yet these could not be quantified. Therefore, a quantitative approach, in particular a one-group pretest-posttest study, is valuable for exploring the effect of participating in Men’s Sheds on physiological measures of stress (i.e. HRV, salivary cortisol, and resting heart rate and blood pressure) and psychological outcomes, including measures of anxiety and HRQoL in individuals involved. This chapter describes the quantitative component of the study. The first sections outline the design of the study in detail, providing a comprehensive picture about how the quantitative data was collected and analysed. The last sections present the empirical results, the overall discussions and conclusions.

8.1 Purpose of the Study

Social isolation is a major risk factor for many chronic noncommunicable diseases, and the prevalence of this condition in men, especially after retirement or retrenchment, has increased (Ajrouch et al., 2005; Dykstra & Fokkema, 2007; Thompson & Whearty, 2004; Ye et al., 2009). A long history of research has been done on the clinically meaningful link between social isolation and the development
of advanced chronic diseases, including coronary artery disease (CAD) and type 2 diabetes (Holt-Lunstad et al., 2010; Lett et al., 2005; Uchino, 2009; Uchino et al., 2012). It has been proposed that social isolation operates as a psychosocial stressor (Cacioppo et al., 2002; Hackett, Hamer, Endrighi, Brydon, & Steptoe, 2012; Steptoe, Shankar, Demakakos, & Wardle, 2013) and can lead to elevated cortisol levels, blood pressure, which leads to major cardiometabolic disturbances (Stafford, Gardner, Kumari, Kuh, & Ben-Shlomo, 2013).

Australian men are three times as high as that of women to die from cardiovascular diseases placing tremendous strain on the healthcare system and the national economy (AIHW, 2010). Socially isolated men also suffer from low HRQoL, anxiety, depression and suicidal ideation versus their socially supported peers (Armstrong, 2014). Innovative and efficient strategies for providing social inclusion, especial for men after retirement and retrenchment are still needed, and could result in significant health and economic benefits.

As already stated in the previous chapters, Men’s Sheds are a proven way of helping some men find the social support. A key scientific question is whether the social inclusion provided by Men’s Sheds improves physiological measures of stress and psychological outcomes, including measures of anxiety and HRQoL in men involved. Unfortunately, no research to date has investigated these associations. Therefore, the objectives of this quantitative study were two-fold. The first objective was to quantify how participation in the Men’s Shed impacts physiological measures of stress (HRV, salivary cortisol, and resting heart rate and blood pressure) and psychological outcomes (anxiety and HRQoL). The second objective was to determine if changes in these outcome measures over time were correlated.

The following hypotheses were tested during this research investigation:  
**Primary hypothesis:** After a six-month period, participants involved in the Men’s Sheds will experience a significant increase in resting HRV and a decrease in the basal levels of cortisol.
**Secondary hypotheses:** Increased HRV will be associated with a decrease in cortisol levels, reduced resting heart rate and blood pressure and improved psychological health and HRQOL.

It must be said from the outset that this quantitative study is small and intended to complement, confirm, cross-validate, or corroborate findings of the qualitative study (Creswell et al., 2003). However, this study is also unique in that it is the first quantitative study to evaluate the effects of Men’s Sheds on resting HRV and a range of clinically important biomarkers and psychological indices. Furthermore, this study can serve as a pilot study, which allowed assessment of trends in the data and a larger longitudinal study can be informed by the results obtained from this study.

8.2 Methods

8.1.1 Study Design

The quantitative study utilised a one-group pretest-posttest experimental design. This design allows one group of research participants to be pre-tested on the dependent variable and then post-tested after the treatment condition has been administered (Dimitrov & Rumrill, 2003; Edmonds & Kennedy, 2012). The one-group pretest-posttest design has practical advantages over randomized control trials because it deals with intact groups and, therefore, does not disrupt the existing research setting. In this study, the participants were not manipulated into controlled or non-controlled groups neither were the Men’s Sheds conditions changed. Keeping the groups and conditions intact “reduces the reactive effects of the experimental procedure and, therefore, improves the external validity of the design” (Dimitrov & Rumrill, 2003, p.160). However, this design does not control for potentially confounding extraneous variables.

The researcher carried out all experimental procedures after receiving training on protocols. It is important to highlight that the researcher is a trained registered nurse, and he also received extensive support and guidance from the co-supervisor.
who is an expert in physiology research and has published widely on stress and HRV (see, for example, Cheema et al., 2013; Cheema, Marshall, Chang, Colagiuri, & Machliss, 2011; Melville, Chang, Colagiuri, Marshall, & Cheema, 2012; Yeung et al., 2014). The University of Western Sydney Human Research Ethics Committee approved all procedures, and informed consent was received from all participants.

8.2.1 Sample Size and Power Calculation

There are no published data on the effects of participating in Men’s Sheds on HRV and cortisol levels. However, as already discussed it has been shown that Men’s Sheds offers space for social connections, which could induce adaptations that are similar to those achieved with social support interventions. Therefore, data derived from social support intervention trials that have evaluated cortisol release and HRV were used to compute statistical power a priori using G*Power statistical power analysis program (Faul, Erdfelder, Lang, & Buchner, 2007). According to these data, (Cosley et al., 2010; Ditzen et al., 2008; Field, Diego, Delgado, & Medina, 2012; Okamoto & Tanaka, 2004; Richter et al., 2012; Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008) the experimental group is expected to experience a moderate-to-large increase in HRV after social support interventions (Effect size =0.75) and a slight decrease in cortisol release over time of between 3.6 nmol/L to 4.0 nmol/L (Effect Size=0.75).

Using a paired t-test (two-sided, alpha=0.05, power=0.8, effect size=0.75), a two-sided test of significance, approximately 16 participants was required for the regression to detect a large effect size with 80% power. However, as this study involved multiple analyses, the researcher aimed for a larger sample size. Being a longitudinal study, it was also expected that a small number of the participants would be lost to follow-up, thereby yielding unbalanced data with unequal numbers of measures. Therefore, the final sample consisted of 33 men involved in Men’s Sheds after 2 were lost to follow-up.
8.2.2 Participant Recruitment

Participants were recruited through the same procedures described in the qualitative study (refer to Chapter 5, Section 5.5 for the detailed procedures), although with the addition of a snowball sampling technique. Snowball sampling is a technique in which participants are obtained through a chain of referrals (Sadler, Lee, Lim, & Fullerton, 2010). Essentially, men who were already involved in the qualitative study referred friends whom they felt met the eligibility criteria to the researcher. Eligibility criteria included having joined Men’s Sheds in the last six months at the time of enrollment in the study, and aged over 18 years but below 90. Individuals with a history of thyroid or other autoimmune disease, history of Cushing’s syndrome or Addison’s disease were excluded. To ensure that all participants were able to give informed consent and answer the self-report questions, participants who were non-English speaking or evidenced severe cognitive impairment such as dementia were also excluded.

Screening for these participants often occurred during scheduled interviews. Sixty potential participants contacted the researcher expressing their interest to participate. They were invited to an individual information meeting that including a screening procedure for their eligibility. The information meeting included a verbal introduction to the research project, the ethical implications and the rules and their rights as study participants. The potential participants were informed about the study procedures, especially the evaluation of resting HRV and the collection of saliva for cortisol analysis. They watched 2 videos - one on recording an ECG, which was 10 mins long, and another one on the collection of saliva for cortisol testing, which was 5 mins long. The potential participants were offered the opportunity to ask questions about all aspects of the experiment and the study as a whole. Interested individuals were instructed to sign an informed consent and answer a demographic questionnaire, which included medical history and the eligibility criteria. Out of the fifty-one individuals who attended these information sessions, only thirty-five met the eligibility criteria. Of these thirty-five, thirteen had already
consented to participate in the qualitative study hence they were recruited into both studies.

Recruitment and assessment procedures (described below) took place concurrently from November 2013 - January 2014.

8.2.3 Settings and locations

The experimental work and data collection were carried out in various locations. The first location was an office place in Bankstown, 20km from Sydney Central Business District. The office space was located within the Bankstown Men’s Sheds, and it was fitted with an air conditioning system. It had enough space to put a portable massage bed with a pillow. The majority of the participants from around Sydney preferred to come to this place (n=12). Makeshift office spaces were also created in various Men’s Sheds (n=10), and care was taken in ensuring their appropriateness for the experiment. For instance in one shed, there was noise from the corridor outside the door, and an old piece of carpet was laid out to dampen the sound of footsteps. The majority of participants in this study preferred to come to these settings and locations (n=15). A minority of the men (n=7) preferred the sessions to be carried
out in their homes. There were normally no other activities in the home while the sessions were carried out, so it was very quiet, and all other experimental conditions had to be met.

8.2.4 Sequence of Procedures

As already stated all participants underwent an interview concerning their involvement in Men’s Sheds and a screening exercise to determine their inclusion in the study according to the inclusion-exclusion criteria detailed above. After information and consent, participants were enrolled and an appointment for the experiment was fixed. As shown in figure 8.2, salivary cortisol was collected three times by the participant at home: in the morning upon waking, 30 minutes after waking and in the evening before dinner. These measures were completed by the participant at home the day before the HRV experiment. Participants were asked to avoid caffeinated beverages on the days of their assessments. They were also instructed to avoid any rigorous exercise for at least 48 hours prior to their assessments. On their arrival to the assessment room, participants were asked to relax for 30 minutes in a 3-fold massage table-chair-bed. After explanations on the HRV session, participants completed the State-Trait Anxiety Inventory (STAI) and the Medical Outcomes Trust Short-form 36 Health Status (SF36) Stewart (Spielberger & Reheiser, 2004) questionnaires. Resting blood pressure and heart rate were then measured, and participants connected with electrodes for ECG recording. After a resting period of 15 minutes, a continuous 5-minute ECG recording was collected.

The participants were instructed to continue attending Men’s Sheds as usual. They were also to keep fortnightly contacts with the researcher and documented any significant periods of stress, illness, medical intervention including unplanned visit to a physician during the period under study. Each participant performed the experiment twice, on separate days (at baseline as well as at six months follow-up). Repeat assessments at six months were completed at precisely the same times of day and using the same procedures as the baseline assessment.
8.3 Outcome Measures

All outcome measures were collected at baseline (beginning of involvement in Men’s Sheds) as well as at after 6 months participation in the Men’s Sheds, using the same procedures. The outcome measures can be grouped as physiological measures of stress and psychological outcomes. Table 8.1 presents the outcome measures (dependent variables) of this study.
Table 8.1: Outcome Measures and Dependent variables in this study

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Dependent Variable</th>
<th>Subscale</th>
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<tbody>
<tr>
<td>Physiological Measures of Stress</td>
<td>Heart Rate Variability Measures</td>
<td>SDNN</td>
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<td></td>
<td></td>
<td>PNN50</td>
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<td>RMSSD</td>
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<td>SDANN</td>
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<td>LF POWER</td>
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<td>HF POWER</td>
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<td>LF: HF RATIO</td>
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<tr>
<td></td>
<td></td>
<td>TOTAL POWER</td>
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<tr>
<td>Cortisol Levels</td>
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<td>Cortisol at wake-up</td>
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<tr>
<td></td>
<td></td>
<td>Cortisol 30mins post wake-up</td>
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<tr>
<td></td>
<td></td>
<td>Cortisol in the Evening</td>
</tr>
<tr>
<td>Resting Hemodynamic Measures</td>
<td></td>
<td>Heart Rate</td>
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<tr>
<td></td>
<td></td>
<td>Systolic Blood Pressure</td>
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<tr>
<td></td>
<td></td>
<td>Diastolic Blood Pressure</td>
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<tr>
<td>Psychological health Status</td>
<td>Medical Outcomes Trust Short-form 36 Health Status Questionnaire (SF36)</td>
<td>Physical component scale</td>
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<tr>
<td></td>
<td></td>
<td>Mental component scale</td>
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<td></td>
<td>Medical Outcomes Trust Short-form 36 Health Status Questionnaire (STAI)</td>
<td>STAI State Anxiety</td>
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<td>STAI Trait Anxiety</td>
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</table>

SDNN, standard deviation of the normal-normal interval; RMSSD, root-mean-square of the successive normal sinus RR interval difference; PNN50, percentage of absolute differences between successive normal RR intervals that exceed 50 ms; HF, high frequency power; LF, low frequency power; LF:HF, ratio of low frequency to high frequency power

8.3.1 Physiological Measures of Stress

Physiological measures of stress included HRV measures, salivary cortisol, and resting heart rate and blood pressure.

8.3.2 Heart Rate Variability Measures

HRV was assessed using the Sphygmocor HRV System™ (AtCor Medical Pty, Sydney, Australia). It is portable device, equipped with Sphygmocor Pulse Wave Analysis software, which is capable of performing the power spectral analyses, providing both time and frequency domain measures of HRV. The following time and
frequency domain measures of HRV were assessed: (a) the standard deviation of all normal RR intervals in the entire ECG recording (SDNN), (b) standard deviation of the means of all normal RR intervals during each 5-min segment (SDANN); (c) root-mean square of differences of successive RR intervals (rMSSD); (4) the percent of differences of adjacent RR intervals >50 msec (pNN50), (d) number of low frequency domains (LF), (e) low-to-high frequency ratio (LF: HF) and (f), number of high-frequency (HF) (see table 8.2 for definitions and clinical significance).

According to the Task Force for Pacing and Electrophysiology, SDNN is the most representative parameter of HRV, which is often cited in medical papers as synonymous with HRV. Thus low SDNN is low HRV, which primarily indicates reduction in dynamic complexity and is associated with weakened ANS’s ability to maintain homeostasis against internal/external environmental challenges including lowered coping ability to various emotional or physical stressors and general weakness of health. Conversely, and more desirable, high SDNN is synonymous with high HRV, which indicates the ANS' regulating function and stress coping ability is good (Task Force of the European Society of Cardiology, 1996). Thus, the SDNN was used in this study as the primary outcome parameter.

The RMSSD parameter is associated with the electrical stability of heart and is influenced by the autonomic nervous system activity (Mazurak et al., 2011). A decrease in this parameter to below 10ms accompanying lowered SDNN (below 20ms) is associated with high risk of cardiac disease development (Deepak, 2011). The rMSSD and pNN50 are highly correlated with high frequency (HF) power, which is believed to represent pure vagal modulation (Deepak, 2011; Task Force of the European Society of Cardiology, 1996). The LF is associated with blood pressure control, reflecting sympathetic activity. The HF is correlated with respiratory sinus arrhythmia reflecting parasympathetic activity (Task Force of the European Society of Cardiology, 1996). The LF/HF ratio is also a valuable measure as it is representative of the interaction between the sympathetic and parasympathetic branches of the autonomic nervous system (Sandercock & Brodie, 2006).
Table 8.2: HRV Definitions and Clinical Significance

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDNN</td>
<td>Standard deviation of the normal-to-normal (NN) interval; reflects general variability of heart rate influenced by both sympathetic and parasympathetic branches, also endocrine and thermoregulatory mechanisms. It is measured and reported in milliseconds. An increase in SDNN suggests a reduction in physiological stress (i.e. increased vagal tone).</td>
</tr>
<tr>
<td>SDANN</td>
<td>Standard deviation of sequential five-minute R-R interval reflects humoral influence and the activity of central autonomic structures on heart rate. It is also measured and reported in milliseconds and is highly correlated with SDNN. Thus, an increase in SDANN suggests a reduction in physiological stress.</td>
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<tr>
<td>rMSSD</td>
<td>Root mean square successive difference (the square root of the mean squared differences of successive NN interval) represents represent vagal regulatory activity. An increase in rMSSD suggests a reduction in physiologic stress (i.e. increased vagal regulatory activity).</td>
</tr>
<tr>
<td>pNN50</td>
<td>The mean number of times per hour in which the change in consecutive normal sinus (NN) intervals exceeds 50 milliseconds; it is suggested that it reflects, similar to RMSSD, mostly the influence of parasympathetic activity. An increase in pNN50 suggests a reduction in physiologic stress (i.e. increased vagal tone).</td>
</tr>
<tr>
<td>HF Power</td>
<td>High frequency power of spectral analysis of heart rate, 0.15–0.4 Hz; reflects short term fluctuation of HR induced by parasympathetic part of ANS. An increase in HF power suggests a reduction in physiological stress (i.e. increases in parasympathetic input to the sino atrial node)</td>
</tr>
<tr>
<td>LF Power</td>
<td>Low frequency power of spectral analysis of heart rate, 0.03(0.04)-0.15 Hz; clinical meaning is widely debated; most authors suggest that it reflects both sympathetic and parasympathetic (baroreflex) influences of HR. A reduction in LF power suggests a reduction in physiological stress (i.e. reduced sympathetic activity plus increased vagal tone)</td>
</tr>
<tr>
<td>LF-HF Ratio</td>
<td>Low frequency power and High frequency power is ratio of sympathetic and parasympathetic. A reduction in LF-HF ratio, usually to less than 2 is an indication of healthy stress levels</td>
</tr>
</tbody>
</table>

Source: Mazurak et al., (2011)

Twenty-four hours prior to the test, participants were advised to avoid caffeinated beverages and any vigorous exercise. The data required to establish measures of HRV was collected using ECG (Sphygmocor HRV System™). The ECG electrodes were fixed to the skin using the adhesive backing on the electrode. A lead II configuration was used with the three electrodes placed on the left leg (LA) and right leg (RA) with the third electrode placed on the left leg. The trace was checked for clarity before commencement of data collection. After 15 minutes of supine rest with a regular
and calm breathing pattern, a continuous 5-minute ECG recording was performed and stored for later analysis of measures of HRV.

Analysis of HRV measures was performed from the five-minute blocks of collected data using SphygmoCor Pulse Wave Analysis software (AtCor Medical Pty, Sydney, Australia). Data was analysed in both time and frequency domains. The methodologies employed in the calculation of the time domain and spectral measures are detailed in the user’s manual document ‘A Clinical Guide Pulse Wave Analysis’ (AtCor Medical Pty, Sydney, Australia). The use of this software and the inherent methodologies are widely used in studies of HRV is considered the reference gold standard for assessing HRV measures (Jaiswal et al., 2013; Unosson et al., 2013).

8.3.3 Salivary Cortisol

The saliva samples from each participant were collected using Salimetrics ® Oral Swab (SOS) collection kits. Each kit included three SOS swabs and three storage tubes, and written instructions from Salimetrics (https://www.salimetrics.com) on collection. SOS collection kits were given to the men after the initial meeting (n = 30) or at any day requested by the men (n = 3), and were brought in by the participants on the following day, which was the HRV evaluation day.

The participants were asked to rinse their mouth 5 minutes before saliva samples were taken in order to eliminate any particles that may alter the cortisol assessment results. During sample collection, men were instructed to hold the oral swab under the tongue and soak it with saliva for approximately 90 seconds. After collection, the salivettes were kept in a plastic bag and stored in the freezer at -20ºC until transported to the Stratech Scientific laboratory for analysis. The researcher labeled and numbered the tubes as per the number assigned to each subject and times when samples were collected.
On the day of assay, samples were thawed according to the manufacturer’s instructions. Thawed samples were centrifuged at 1500x g for 15 min to collect clear saliva, and this saliva was used without further processing for all assays. All samples were brought to room temperature before adding to assay wells. To increase consistency, saliva samples were divided into duplicate subsamples and then assayed. Scientists at Stratech Scientific Biochemistry lab in Sydney, Australia, performed the assay.

### 8.3.4 Blood Pressure

Blood pressure was measured after 15 minutes of rest using a manual sphygmomanometer and a stethoscope. As per standard protocol, the participant was instructed not to talk or move the body during the measurement. Resting systolic and diastolic blood pressure was then evaluated via auscultation. Systolic blood pressure represents the working phase of the heart while diastolic blood pressure represents the resting phase of the heart (Neves, Peltola, Huikuri, da Costa Rocha, & Ribeiro, 2014). In a healthy adult, the lower limits for systolic/diastolic are 100/60 mmHg and the upper limits are 140/90 mmHg (Pickering et al., 2005). Recordings were noted immediately in both the data collection log of the participant and the Sphygmocor HRV System. The measurement of blood pressure was done 15 minutes before recording the HRV.

### 8.3.5 Resting Heart Rate

Resting heart rate was evaluated via manual assessment of the 60-second pulse. The normal resting heart rate for a healthy adult ranges from 60–100 beats per minute (b.p.m) (Cifkova et al., 2003). Activities such as sleep, physical exercise, anxiety, stress, illness, and drugs can affect the heart rate, either by decreasing or increasing it. A slow heart rate is called bradycardia and occurs when it is below 60 b.p.m, whereas a fast heart rate, also called tachycardia, occurs when the rate is above 100 b.p.m (American College of Sports Medicine, 2013). In unconditioned and sedentary individuals heart rate can occasionally exceed 100 b.p.m, whereas in highly trained
endurance athletes it can be as low as 30 b.p.m (Waugh & Grant, 2014). Epidemiological evidences demonstrate that resting heart rate, which is mediated primarily by the vagal tone, specifically the parasympathetic, correlates with cardiovascular health and determines life expectancy (Cook, Togni, Schaub, Wenaweser, & Hess, 2006).

8.3.6 Psychological Health Status

Psychological health status was self-rated by the participants on the Medical Outcomes Trust Short-form (SF36) Health Status (Stewart et al., 1988) and the State-Trait Anxiety Inventory questionnaires (Spielberger & Reheiser, 2004).

8.3.7 Medical Outcomes Trust Short-form 36 Health Status Questionnaire

The Medical Outcomes Study Short-form 36 (SF-36) is a generic health status measure that assesses eight domains of quality of life (Stewart et al., 1988). The questionnaire comprises of the physical component scale (PCS) and the mental health component scale (MCS). Low physical functioning categories of the SF-36 are associated with mortality risk (Kwak et al., 2013). Higher domain and summary scores, ranging from 0–100, denote better perceptions of health status. When the physical categories are combined to the physical component score (PCS) the score obtained by stressed individuals or those suffering from depression is consistently below the normal population (Stewart et al., 1988). Conversely, a high PCS score can also be strongly associated with survival and good health (Look Ahead Research Group, 2014; Mavaddat et al., 2011). The SF-36 questionnaire was chosen because it demonstrates a high degree of internal consistency and validity and has been shown to be sensitive enough to detect changes over time in response to a health intervention in different populations (Kwak et al., 2013).
8.3.8 State-Trait Anxiety Inventory

Anxiety was assessed using the State-Trait Anxiety Inventory (STAI). The STAI consists of two, 20 item self-report scales designed to measure anxiety proneness (trait), as well as the current level of tension and apprehension (state) (Ware, Snow, Kosinski, & Gandek, 1993). Scores for both state and trait anxiety range from 20 to 80 and lower scores are indicative of lower anxiety. The state anxiety scales ask how an individual generally feels, while the trait anxiety scale asks how they feel at a particular moment. It is a widely used and validated inventory for measuring anxiety in the general population as it takes 15-20 minutes to complete. The STAI has been used extensively in research on anxiety in cardiovascular disease, in pre-post treatment studies and in detecting mental disorders in geriatric patients (Spielberger & Reheiser, 2004).

8.3.9 Clinical Covariates

Additional factors potentially related to the physiological and psychological health factors were extracted at baseline testing by means of standard questionnaires and were entered into analytic models as appropriate. These included age, medical history, and length of involvement in the sheds, marital status and socioeconomic status.

It was planned that the participants themselves should do most of the filling in of questionnaires. The disadvantage of this procedure was that the exact time of the answering the questionnaires could not be controlled, and there was a risk that the participant would omit some sections of the questionnaires resulting in missing data. It was also planned that both the SF-36 and STAI questionnaires should be filled-in before the HRV assessment.

It was expected that not everything would work out exactly as planned. A couple of procedures were invented to handle situations when something did not go according to the scheme. For instance, if the participant was unable or uncomfortable to fill in
a questionnaire, the researcher assisted them in the privacy before the start of the session. Most participants (n=25) preferred this method. To keep a check on the whole data collection procedure, an outlook calendar, and an excel data log was utilised to schedule appointments and tick tasks that had been done.

8.4 Administration of Data Collection

The complexity of data collection was managed by checking all occasions of handing out material for each participant in a data collection log. The log included a list of all questionnaires, instructions, protocols and SOS collection kits. Once the material was given out, the corresponding column was ticked off. The participants were also given written reminders on a piece of paper with dates of data collection tasks. These reminders were also sent as text messages to all participants. The researcher also kept an up-to-date outlook calendar reminder of the meetings and data collection tasks.

8.4.1 Storage of data

Both soft and hard copy-paper files were used to store the collected data. All questionnaires and notes went into participant folders and were stored in a locked file cabinet at the University of Western Sydney. An Excel database was created with tabs and columns to input all the participants’ information and was saved in a password-locked computer at the University of Western Sydney. When the cortisol results were e-mailed from the laboratory, the researcher entered them into a spreadsheet. All participants’ information and results in the computer documents were numerically coded, i.e. names, addresses and other confidential information was de-identified.

8.4.2 Data scoring

All written data from questionnaires, cortisol test results, HRV, blood pressure, and pulse measurements were scored on one data sheet. Additional demographic and
medical data such as age, period of involvement with Men’s Sheds, medical interventions before and after joining Men’s Sheds were also included. The scores of all questionnaire items were transferred to the data sheet. The advantage of assisting participants to complete questionnaires was that there were no missing values. In order to avoid data computation errors, questionnaire scores were calculated using formulas in Microsoft Excel spreadsheets.

The Stratech Scientific Biochemistry laboratory sent the cortisol results to the researcher as an e-mail attachment. The results were on an excel spreadsheet with the applied confidence intervals. These results were first copied into the big data sheet of the study before they were scored in SPSS. This procedure ensured errors were eliminated as values were checked several times before they were copied and pasted. HRV data was exported directly from the SphygmoCor system in a tab-delimited text-file format. This data was then imported into the Excel data sheet before it was scored in SPSS.

8.5 Statistical Analyses

8.5.1 Analysis Preparation

All statistical procedures were completed using the IBM Statistical Package for Social Sciences (SPSS), version 22.0, IBM Corp., 2013). The independent variable was intervention (a 2-level variable: baseline vs. after a six months period). All the 18 dependent variables were inspected visually and statistically for normality and no issues were identified. Linear mixed-effects models (LMM) were proposed to model the relationship between each of the dependent variables and the independent variables of interest. In general, a linear mixed-effects model (Fathi et al., 2014; Kvaal, Ulstein, Nordhus, & Engedal, 2005; Vøllestad, Sivertsen, & Nielsen, 2011), is any model that satisfies:

\[ Y_i = X_i \beta + Z_i b_i + \varepsilon_i, \]
\[ b_i \sim N(0, D), \]
\[ \varepsilon_i \sim N(0, R_i), \]
\[ b_1, \ldots, b_N, \varepsilon_1, \ldots, \varepsilon_N \text{ independent}, \]
where $Y_i$ is the $n_i$-dimensional response vector for subject $i$, $1 \leq i \leq N$, $N$ is the number of participants, $X_i$ and $Z_i$ are $(n_i \times p)$ and $(n_i \times q)$ dimensional matrices of known covariates, $\beta$ is a $p$-dimensional vector containing the fixed effects, $b_i$ is the $q$-dimensional vector containing the random effects, and $\epsilon_i$ is an $n_i$-dimensional vector of residual components. $D$ is a $(q \times q)$ covariance matrix and $R_i$ is a $(n_i \times n_i)$ covariance matrix.

No random effects were constructed. The unstructured covariance structure was used to model the dependence between observations from subject $i$. The F test based on the type III estimable functions for each effect is used to test if the effect of an independent variable was statistically significant. Without further specification, a p-value of less than 0.05 indicates that the effect was statistically significant. Estimated marginal means and the associated standard error (SE) for each factor were reported. Estimated marginal mean of a factor is the mean response of the factor after adjusting for any other variables in the model (Verbeke & Molenberghs, 2009).

The assumptions of the LMM are that measurements on a subject should be a sample from a multivariate normal distribution. In other words, the residuals (error terms) of LMM are assumed to follow a multivariate normal distribution. Chi-square Q-Q (quantile-quantile) plots were used to assess multivariate normality (West, Welch, & Galecki, 2014). The chi-square Q-Q plot is constructed based on the Mahalanobis distances for the sample. For multivariate data, we plot the ordered Mahalanobis distances versus estimated quantiles (percentiles) for a sample of size $n$ ($n=33$ in this study) from a chi-squared distribution with $p$ degrees of freedom ($p =$# of measures, $p = 2$). When the points lie very nearly along a straight line, the normality assumption remains tenable. Appendix I show exemplars of how the mixed-effects model was fit.

To determine if changes in HRV and HR, BP and self-report health measures were correlated, Spearman correlation coefficient, $\rho$ ("rho") tests were computed to test correlations of follow-up scores. As compared to Pearson product-moment
correlation coefficient tests ($r$), Spearman’s rho is more robust to outliers and does not make assumption for normality (Burdenski, 2000; Johnson & Wichern, 1992). However, Pearson's correlation and Spearman's rho tend to give similar results if the data are normally distributed. Spearman rank correlation calculates the $P$ value the same way as linear regression and Pearson’s correlation, except that the variables are ranked not measured (McDonald, 2009).

8.6 Results and Interpretations

8.6.1 Demographics/Descriptive Statistics

The total number of participants in the study was 33. Figure 8.3 shows the sampling distribution of age for these 33 participants. The participants ranged in age from 51 to 87, with a mean of 69.4 years (SD=7.66), represented at least twenty-five different Men’s Sheds in Sydney and Central Coast areas. The participants had been involved in Men’s Sheds for an average of 10.5 weeks (SD= 9.59). In this study, attendance was defined as regularly participating in Men's Sheds (i.e. participating at least two days per week for a minimum of 30 minutes each day).

Four participants were on antidepressants, and two were still seeing a psychologist for anxiety-related ailment and thus fulfilled the clinical criteria for depression. Four participants were current smokers while two had a history of drug and alcohol abuse but did not presently take any substance. Other than coronary artery diseases, the most common chronic conditions were diabetes ($n = 9$), chronic obstructive pulmonary disease (COPD) ($n=5$), hypertension ($n=4$) and hypercholesterolemia ($n=3$). None of the participants was presently engaged in any other socially inclusive venture or regular physical activity outside the Men’s Sheds.

The majority of the participants were not engaged in paid work; 73.2% were retired, and an additional 15.4% were unemployed. Only 12.2% ($n=5$) reported that they were employed, either part-time or casual, and none worked a full-time job. However, their socioeconomic status (as indicated by annual income) put them at
the bottom of the socio-economic ladder. Table 8.3 shows the demographics, such as marital status, frequency of attendance in Men’s sheds per week, ethnicity, level of education, employment status for the 33 participants in the study. It is important to highlight that 39.3% (n=13) of the participants had also participated in the qualitative study.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>26 (79)</td>
</tr>
<tr>
<td>Widowed</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (9)</td>
</tr>
<tr>
<td>Single</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Frequency of attendance in Men’s sheds per week</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6 (18)</td>
</tr>
<tr>
<td>3</td>
<td>20 (61)</td>
</tr>
<tr>
<td>4</td>
<td>7 (21)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White/European/Australian</td>
<td>22 (67)</td>
</tr>
<tr>
<td>Aboriginal and Torres Strait Islander</td>
<td>3 (9)</td>
</tr>
<tr>
<td>Middle Eastern/Arab</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (3)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (15)</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>3 (9)</td>
</tr>
<tr>
<td>High school</td>
<td>9 (27)</td>
</tr>
<tr>
<td>College</td>
<td>18 (55)</td>
</tr>
<tr>
<td>University</td>
<td>3 (9)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>Retired</td>
<td>24 (73)</td>
</tr>
<tr>
<td>Employed</td>
<td>4 (12)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>5 (15)</td>
</tr>
</tbody>
</table>

N=33

8.6.2 Outcome Measures

All outcome measures are presented in Table 8.4.

8.6.1 Heart Rate Variability, Cortisol, Heart Rate and Blood Pressure Measures

In support of the hypothesis, 6-months of involvement in the Men’s Shed significantly increased SDNN ($p = 0.013$), suggesting reduced physiological stress and increased vagal tone. The estimated marginal means of SDNN were 18.67 ($SE = 1.52$) and 19.85 ($SE = 1.46$) at baseline and after a six months period, respectively. To
further support the hypothesis, after 6 months of participating in Men’s Sheds, the participants significantly reduced pNN50 \((p = 0.03)\), LF power \((p = 0.049)\) and the LF: HF ratio \((p = 0.019)\) while increasing HF power \((p = 0.006)\); these However, no significant improvements were observed in RMSD \((p = 0.108)\) and SDANN \((p = 0.649)\).

In support of the hypothesis, evening cortisol was significantly reduced after 6 – months of participation \((p = 0.000)\). Both the wake-up \((p = 0.422)\) and 30 minutes after wake-up cortisol levels did not significantly reduce. It is important to also note that there was a statistically significant relationship between cortisol at wake-up and frequency of attendance in Men’s Sheds \((p = 0.04)\). The coefficient of frequency of attendance in Men’s Sheds \((-0.20)\) indicated that each 1-unit increase of frequency of attendance in Men’s Sheds was associated with a 0.20-unit decrease in cortisol at wake-up. The same effect was observed between the cortisol 30mins post wake-up and frequency of attendance in Men’s Sheds \((p = 0.045)\). The coefficient of frequency of attendance in Men’s Sheds \((-0.18)\) indicated that each 1-unit increase of frequency of attendance in Men’s Sheds was associated with a 0.18-unit decrease in Cortisol 30mins post wake-up.

The heart rate did not change. However, there was a statistically significant relationship between heart rate and frequency of attendance in Men’s Sheds \((p = 0.01)\). The coefficient of frequency of attendance in Men’s Sheds \((-3.20)\) indicated that each 1-unit increase of frequency of attendance in Men’s Sheds was associated with a 3.20-unit decrease in heart rate. There was also a positive relationship between age and heart rate \((p = 0.035)\). The coefficient of age \((0.21)\) indicated that each 1-year increase of age was associated with a 0.21-unit increase in heart rate. Favourable to the hypotheses, there was a positive and significant relationship between systolic blood pressure \((p = 0.041)\) and diastolic blood pressure \((p = 0.001)\) and the intervention. The estimated marginal means of systolic blood pressure were 143.13 \((SE = 3.84)\) and 141.19 \((SE = 3.63)\) at baseline and after a six months period, respectively. Similarly, the estimated marginal means of diastolic blood pressure decreased from 87.92 \((SE = 1.48)\) at baseline to 85.68 \((SE = 1.33)\) after a six months period.
<table>
<thead>
<tr>
<th>Dependent measures</th>
<th>Subscale</th>
<th>Baseline (n=33)</th>
<th>At 6 months n=33</th>
<th>Change Score (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time and frequency domain measures of HRV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDNN</td>
<td>Mean</td>
<td>19.36</td>
<td>20.55</td>
<td>6.71</td>
<td>1.18 ±2.29</td>
</tr>
<tr>
<td>PNN50</td>
<td>Mean</td>
<td>26.14</td>
<td>23.72</td>
<td>5.05</td>
<td>-2.42 ±1.72</td>
</tr>
<tr>
<td>RMSSD</td>
<td>Mean</td>
<td>14.12</td>
<td>15.41</td>
<td>6.13</td>
<td>+1.29 ±2.09</td>
</tr>
<tr>
<td>SDANN</td>
<td>Mean</td>
<td>11.64</td>
<td>11.94</td>
<td>9.25</td>
<td>+0.30 ±3.16</td>
</tr>
<tr>
<td>LF POWER</td>
<td>Mean</td>
<td>123.69</td>
<td>126.00</td>
<td>93.57</td>
<td>-29.82 ±31.92</td>
</tr>
<tr>
<td>HF POWER</td>
<td>Mean</td>
<td>49.83</td>
<td>77.30</td>
<td>50.85</td>
<td>+8.48 ±17.35</td>
</tr>
<tr>
<td>*LF-HF RATIO</td>
<td>Mean</td>
<td>6.88</td>
<td>4.76</td>
<td>6.91</td>
<td>+0.89 ±2.36</td>
</tr>
<tr>
<td>TOTAL POWER</td>
<td>Mean</td>
<td>319.97</td>
<td>316.09</td>
<td>208.16</td>
<td>-3.88 ±71.02</td>
</tr>
<tr>
<td><strong>Salivary cortisol levels (ug/dL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At wake-up</td>
<td>Mean</td>
<td>0.54</td>
<td>0.53</td>
<td>0.38</td>
<td>-0.01 ±0.13</td>
</tr>
<tr>
<td>30mins after</td>
<td>Mean</td>
<td>0.51</td>
<td>0.44</td>
<td>0.33</td>
<td>-0.07 ±0.11</td>
</tr>
<tr>
<td>*Evening</td>
<td>Mean</td>
<td>0.27</td>
<td>0.06</td>
<td>0.09</td>
<td>-0.21 ±0.03</td>
</tr>
<tr>
<td><strong>Heart rate/blood pressure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBP</td>
<td>Mean</td>
<td>143.52</td>
<td>141.58</td>
<td>16.21</td>
<td>-1.35 ±5.53</td>
</tr>
<tr>
<td>DBP</td>
<td>Mean</td>
<td>89.03</td>
<td>86.79</td>
<td>6.14</td>
<td>-3.86 ±2.09</td>
</tr>
<tr>
<td>HR</td>
<td>Mean</td>
<td>69.64</td>
<td>68.82</td>
<td>5.33</td>
<td>+3.22 ±1.82</td>
</tr>
<tr>
<td><strong>Psychological Measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF-36 PCS</td>
<td>Mean</td>
<td>45.85</td>
<td>47.45</td>
<td>5.62</td>
<td>+1.60 ±1.92</td>
</tr>
<tr>
<td>SF-36 MCS</td>
<td>Mean</td>
<td>49.22</td>
<td>50.52</td>
<td>4.49</td>
<td>+1.30 ±1.53</td>
</tr>
<tr>
<td>State Anxiety (STAI)</td>
<td>Mean</td>
<td>48.24</td>
<td>41.58</td>
<td>5.43</td>
<td>-6.67 ±1.85</td>
</tr>
<tr>
<td>Trait Anxiety (STAI)</td>
<td>Mean</td>
<td>35.15</td>
<td>31.42</td>
<td>3.55</td>
<td>-3.73 ±1.21</td>
</tr>
</tbody>
</table>

Data presented as mean ± Standard Deviation (SD). SBP, systolic blood pressure; DBP, diastolic blood pressure; SDNN, standard deviation of the normal-normal interval; RMSSD, root-mean-square of the successive normal sinus RR interval difference; pNN50, percentage of absolute differences between successive normal RR intervals that exceed 50 ms; HF, high frequency power; LF, low frequency power; LF:HF, ratio of low frequency to high frequency power; HR, heart rate; STAI, State-trait anxiety inventory; SF36, medical outcomes trust short-form 36 health status questionnaire; PCS, physical component scale; MCS, mental component scale. *Outliers were addressed.
8.6.2 Psychological Health Status

All of the HRQoL domain scores changed significantly in the participants following the intervention period. There was a statistically significant relationship between SF36 Physical Component Summary (PCS) Measure and intervention ($p = 0.011$). The estimated marginal means of SF36 PCS were 46.55 ($SE = 1.19$) and 48.15 ($SE = 1.15$) at baseline and after a six months period, respectively. Similarly, there was a statistically significant relationship between SF36 MCS and intervention at the 0.05 level ($p = 0.001$). The estimated marginal means of SF36 MCS were 49.54 ($SE = 0.99$) and 50.84 ($SE = 0.99$) at baseline and after a six months period, respectively. We conclude that both all the QoL domain scores at 6-months were statistically significantly higher than at baseline. Favourable to our hypothesis, the participants reduced state ($p = 0.000$) and trait anxiety ($p = 0.000$) measures from pre to post intervention (Table 8.4).

8.6.3 Correlations between measures of HRV, HR, Blood Pressure, psychological health and HRQoL

There was a positive correlation between pNN50 and MCS, $rs = 0.445$, $p = .009$. In addition, there was a positive correlation between pNN50 and resting HR, $rs = 0.368$ ($p=0.03$) and systolic blood pressure was 0.401 ($p=0.02$). There was also a positive and significant relationship between decreased levels of cortisol in the evening and the MCS component of the SF-36. Spearman's correlation coefficient, $rs$, was 0.377, and that was statistically significant ($p = .031$). Overall there was little support for the hypothesis that decreased cortisol levels would be associated with low levels of psychological distress. The Spearman's rank correlation coefficient yielded no significant findings, however, it is important to note that higher levels of state anxiety were associated with higher cortisol levels in the evening at baseline. Spearman's correlation coefficient, $rs$ was 0.361 ($p = 0.03$).
8.7 Discussion and Conclusions

Although preliminary in nature because of the small sample size and lack of a control group, our results tentatively allow us to accept the hypotheses that after a six-month period, participants involved in the Men’s Sheds will show an increase in resting HRV and reduction in cortisol levels. A significant but modest relationship was observed between HRV parameters and participating in Men’s Sheds. The participants exhibited significantly increased SDNN ($p = 0.01$), LF Power ($p = 0.04$) and reduced HF Power ($p = 0.00$), LF-HF Ration ($p = 0.01$) and pNN50 ($p = 0.03$). Morning and evening cortisol levels were significantly reduced. These effects were independent of age, marital status and frequency of attendance in Men’s Sheds. There was no association between anxiety or quality of life and HRV measures. These findings indicate that both sympathetic (as reflected by SDNN, LF Power, LF-HF Ratio) and parasympathetic (as reflected by LF Power, HF Power, LF-HF Ratio and pNN50) aspects of autonomic regulation are associated with the social inclusion provided by Men’s Sheds.

For the first time in a prospective, and appropriately powered study, participating in Men’s Sheds has been demonstrated to be an independent predictor of increased resting HRV in men involved. As already discussed, the SDNN is the most representative parameter of HRV. Thus high SDNN is high HRV, which primarily indicates protection from a range of conditions associated with low HRV, including congestive heart failure, diabetic neuropathy and depression (Abercrombie et al., 2004; Sjögren, Leanderson, & Kristenson, 2006). The SDNN significantly increased in this study ($p = 0.01$).

These findings on the SDNN support previous research, which showed that positive social interactions and social support protects against cardiac dysfunction in response to chronic social stressors (Grippo, Trahanas, Zimmerman, Porges, & Carter, 2009). More so, the findings provide insight into the influence of social inclusion provided by Men’s Sheds on autonomic function in men involved as the SDNN
represents the overall parasympathetic and sympathetic autonomic function (Grippo et al., 2009; Leifheit-Limson et al., 2012).

Our study results complement Kao et al. (2014)’s finding that the availability of social support was associated with higher SDNN, which again suggests an impact on both sympathetic and parasympathetic modulation. However, Kao and colleagues also reported a robust association between social connectedness and RMSSDD, which we did not detect within our sample. It is possible that our smaller sample size may have contributed to lack of power to detect this, or it is also likely that the effects of social inclusion provided by Men’s Sheds on HRV are not the same as social support effects on HRV. Furthermore, the RMSSD parameter typically correlates with the HF power in the frequency domain measures of HRV as they are both thought to capture parasympathetic modulation (Grippo et al., 2009). We did identify higher HF power ($p = 0.006$) at six months follow-up suggesting that parasympathetic activity was increased, even though, this was not captured in the RMSSD and SDANN values.

HF power corresponds to the frequency of breathing, and most investigators agree that just as for HRV in the time domain, HF power in the frequency domain mainly reflects respiratory sinus arrhythmia (Michas et al., 2012). An increase in vagal activity of ANS reflected through the HF power is an interesting finding. The reason is not clear, but one possibility is that the impact of social support in Men’s Sheds is more apparent during a phase of the diurnal cycle in which parasympathetic tone dominates. These circumstances may permit influences on HF power to emerge regardless of stressors one is going through. A second possibility is that psychological health factors may also be contributing to this change. Positive associations have been found between the quality of life, emotion regulation strategies, and HRV (Quas et al., 2014). However, in our sample there were no significant correlations between most HRV parameters and quality of life. More objective and detailed measures of quality of life, as well as the greater exploration of the physiological correlates of HF power may provide further insight.
There was a statistically significant relationship between LF power and participating in Men’s Sheds ($p = 0.049$). Recent data suggests that the LF power spectrum from heart rate variability analyses is indicative of baroreceptor sensitivity (BRS) (Manfrini, Pizzi, Trerè, Fontana, & Bugiardini, 2003). Baroreceptors are mechanoreceptors located in the carotid sinus and in the aortic arch, which serve to sense pressure changes by responding to change in the tension of the arterial wall (Manfrini et al., 2003). Thus, BRS are noted as a risk for cardiovascular disease independent of conventional risk factors (Baynard, Goulopoulou, Sosnoff, Fernhall, & Kanaley, 2013). This is an important finding that needs to be read in conjunction with the blood pressure outcomes discussed later in this section.

The study findings also showed a statistically significant relationship between participating in Men’s Sheds and the percent of differences of adjacent RR intervals $>50$ msec (pNN50) at the 0.05 level ($p = 0.03$). This is an important finding considering that the pNN50 parameter is linked to short-term changes in HRV rather than diurnal variations and reflects vagally mediated changes in autonomic tone (Young et al., 2014). The high value of parasympathetic activity (pNN50 <3%) predicts protection from mortality and total events related to coronary artery disease and myocardial infarction (Young et al., 2014).

After removing 5 outliers to satisfy the multivariate normality assumption, a statistically significant relationship between LF-HF ratio and intervention ($p = 0.004$) was observed. The estimated marginal means of LF-HF ratio were $3.27$ ($SE = 0.77$) and $2.37$ ($SE = 0.70$) at baseline and after a six months period, respectively. LF-HF ratio is considered as one of the most useful HRV markers representing the sympathovagal balance, which reflect autonomic nervous system (ANS) activity (see, for example, Brown, Barnes, & Mündel, 2014; Goldstein, Benthó, Park, & Sharabi, 2011; Harte et al., 2013). Therefore, this is an important clinical finding that confirms and replicates previous work on the effect of social supportive interventions in enhancing vagal modulation in healthy and clinical populations (Cosley et al., 2010; Maunder et al., 2012b).
The increase in vagal tone and the decrease in the sympathetic tone observed in our study participants is notable in the context of conventional conceptualisation of autonomic function where sympathetic and parasympathetic systems operate in opposing directions (Kao et al., 2014). This autonomic balance may represent a protective physiological responsivity, which reduces vulnerability to disease and enhance the biopsychosocial pathways of resilience (Brown et al., 2014). As discussed in the introductory chapters, increased vagal tone, as reflected by increased HRV, has been associated with improved health outcomes and reduced risk of coronary heart diseases. These findings suggest that social inclusion provided by Men’s Sheds is associated with physiological processes that may contribute to the maintenance of the health and wellbeing of the men involved.

With regard to whether participating in Men’s Sheds reduces the cortisol levels of the men involved, findings reveal several interesting associations in support of McEwen’s (1998) allostatic load model that posits steeper cortisol slopes reflect healthier stress responding and blunted or attenuated slopes reflect compromised stress response function. A significant but modest relationship was observed between cortisol levels and participating in Men’s Sheds. The participants exhibited significantly reduced cortisol levels especially in the morning when they wake up and in the evening thereby reflecting a steeper cortisol slope.

Although the effects of the social support intervention in this study were generally smaller compared to those observed in the literature, the cortisol recovery value was significant. Cortisol recovery value is the decline of the cortisol level between the highest morning and the evening concentrations (Holwerda et al., 2012). High recovery value (mean 0.53 ug/dL in the morning and 0.06 ug/dL in the evening) indicates a good recovery. Findings of this study confirm the literature that found steeper diurnal cortisol slope to be positively correlated with supportive relations (Giese-Davis, DiMiceli, Sephton, & Spiegel, 2006; Vedhara, Miles, Sanderman, & Ranchor, 2006). Although the studies cited above recruited only female participants, our study replicates those findings in a sample of men. This confirms assertions by
Macdonald (2005), an expert in men’s health that social support and connectedness are important for men as they are for women.

Reduction in cortisol levels is an important finding as the diurnal cortisol slope is used as an indicator of HPA-axis functioning relevant for understanding the linkages between biological stress response systems and social experience (McEwen, 1998). Thus, our study results complement the previous research, which has shown high-perceived social support from confidantes, is associated with steeper cortisol slopes cortisol (Repetti, Wang, & Saxbe, 2011). It is an important finding in that participating in Men’s Sheds may be protecting the men involved from wear and tear on the body’s self-regulatory systems as a result of repeated stressful experiences.

Findings also revealed that participating in Men’s Sheds for 6 months improved the hemodynamic measures and psychological health of the men involved. A significant and positive relationship was observed between the intervention and blood pressure, anxiety and quality of life of life measures. The above findings confirm previous research on social support, anxiety and blood pressure, which has shown a significant positive correlation (Hintsanen et al., 2007). Furthermore, a recent study reported that receiving social support attenuated blood pressure, heart rate, and cortisol reactivity, as well as reduced pain ratings, task difficulty, tension, and effort in the study participants (Hu, Li, & Arao, 2014; Uchino et al., 2012). This is an important finding as research continues to show evidence of increased risk of mortality associated with social isolation in men than in women (Roberts, Klatzkin, & Mechlin, 2015). The novel result of this finding is that participating in Men’s Sheds reversed hypertension and enhanced psychological wellbeing, as indicated by a lower and normal blood pressure and improved quality of life measures. Considering that an enhanced blood pressure and anxiety are associated with a greater risk for the development of cardiovascular disease, our results suggest that by providing social inclusion, as the Men’s Sheds did, it is possible to protect the health and wellbeing of the men involved. Further studies should use a control group to determine whether the intervention would yield similar benefits.
There were, however, no correlations between decreased cortisol levels and psychological health outcomes (anxiety and HRQoL). In other words, the results from this study contrast with prior work showing decreased cortisol levels following social supportive intervention are associated with a decrease in anxiety (Hek et al., 2013; Het, Schoofs, Rohleder, & Wolf, 2012; Yehuda et al., 2014). However, there are notable differences between the cited studies and the current study, and the comparisons and contrasts may explain why this study diverged from the literature. For instance, the study by Hek and colleagues, the population sample comprised large population-based cohort as opposed to a small sample size in our study. In Yehuda and colleagues’ study, collections of cortisol samples were done on days that were anticipated not to be particularly stressful in order to obtain samples that would reflect basal secretion. Although participants in our study were asked to report stressful events, no strategies were implemented only to collect cortisol samples on days that were anticipated not to be particularly stressful. Even though longitudinal in nature, our study intervention was only 21 weeks as opposed to very long intervention periods in other studies.

Overall our findings suggest that participating in Men’s Sheds did influence physiological reactivity or self-reported stress and affect and quality of life in the hypothesized directions. As previously discussed, higher HRV is protective to health and wellbeing. Individuals with higher HRV are not at high risk of developing cardiovascular diseases including hypertension, diabetes, and high cholesterol levels (Thayer & Lane, 2007). The relationship between participating in Men’s Sheds and HRV observed in our sample represent a potential physiological mechanism through which the social inclusion provided exerts its beneficial impact. It is also possible that the social inclusion or high social support may serve as a buffer against the detrimental consequences of negative psychological states. Our findings currently support a more direct impact on the associations between participating in Men’s Sheds and HRV independent of negative psychological states.
8.7.1 Implications of the Findings

The summary of these findings is that participating in Men’s Sheds should be considered and viewed not just in preventing illness but also in fostering wellbeing. The results of this study revealed positive and significant findings for the hypotheses. This study confirms and extends the observations that social support interventions can modulate cardiac autonomic function by enhancing vagal activity and decreasing sympathetic activity of ANS. Hence, participating in Men’s Sheds can be beneficial in increasing cardiovascular health and improving general wellbeing of the men involved. It is imperative to note that participating in Men’s Sheds can improve physiological stress, evaluated via HRV, and associated health-related outcomes in a cohort of men involved.

These research findings are salient and applicable to both clinicians and health practitioners involved in men’s health. It is imperative that clinicians such as doctors and nurses note these findings and refer men at risk of social isolation to Men’s Sheds or similar organisations that provide social inclusion. Health practitioners involved in men’s health must have knowledge of how Men’s Sheds modulate cardiac autonomic function by enhancing vagal activity and decreasing sympathetic activity of ANS and can easily incorporate these findings into health promotion and advancement programs, especially those targeting men at risk of social exclusion and isolation.

8.7.2 Limitations of the Present Research

There are a number of limitations to this study that should be acknowledged. The study was small and did not include a control group with a cohort of men not involved in Men’s Sheds. However, changes in HRV, cortisol levels and other important health-related measures differences were taken into account statistically after controlling for the three covariates, age, marital status and frequency of attendance. The size and constitution of the sample precluded any analysis of the interaction between the general social support outside Men’s Sheds and HRV, which
may have played a significant role in these findings. It is obvious the majority of the men in this study had others sources of support outside the Men’s Sheds. The overall perception of social support, regardless of the source, is identified in the literature as yielding health benefits (Maunder et al., 2012b).

As such, this research offers a restricted view of the strength of the relationships between social support in Men’s Sheds and the cardiac autonomic function and other health-related outcome measures. Nevertheless, the associations reported in this study are important at the population level in that factors that enhance the vagal activity and reduce the sympathetic activity are protective to health. Moreover, these results are even more relevant in light of the studies that have reported the role of social support in increasing vagal activity and positively influencing wellbeing. In a similar vein, it should be noted that despite drawing from different Men’s Sheds the sample utilised was somewhat homogenous in terms of some socioeconomic indicators such as marital status, education level and income. Researchers have observed that support can be socially patterned according these indicators (Houston, Osborn, Lyons, Masvawure, & Raja, 2015), accounting for some of the effects on health outcomes (Stringhini et al., 2012). As such, the use of a homogenous sample strengthens the validity of the findings but does caution against generalizing these to samples of higher or lower socioeconomic status, particularly in terms of educational attainment and income.

The relatively small numbers of participants studied also limits the external validity of the present findings. This limitation was partly as a result of design and partly owing to practical considerations rather than conceptual considerations. With a control group, it would have been easy to detect if the intervention was solely responsible for the physiological changes. Furthermore, the small sample size (n=33) in this study might not have provided sufficient power to detect significant effects on a number of variables. Being a Ph.D. study, there was limited funding to implement

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9 Power analyses, conducted using G*Power statistical power analysis program (McLaren, 2007) indicated that our sample size was sufficient to detect changes and associations.
a large study with a control group, but it was ethically appropriate to design a small quasi-experimental pre-post design with a convenience sample to complement the qualitative findings reported in Chapter six and seven. Future studies can formulate based on these findings to further explore the impact of Men’s Sheds on cardiac autonomic modulation, cortisol levels and other important health-related measures in me involved.

A further limitation of the study was the differences between Men’s Sheds. All sheds were different, so were the members. They come from all walks of life and experiences, had different interests, skills and involved in various activities. At the moment, it is not possible to determine which aspect of Men’s Sheds is responsible for the increase in HRV: Is it the combination of social support plus repeated movements when carrying out physical tasks? The sample was not large enough to distinguish these variables, but they were all considered within the broad definition of social inclusion. Further exploration of the association between different aspects of social inclusion, particularly social support, and HRV is warranted as this may represent an important psychophysiological link.

Regarding the statistical modelling approach used in the current study, limitations are partially in the hands of the researcher and partially in the tools and knowledge available to select the best model. LMM as with other statistical methods is not without its disadvantages. It was chosen in this study due to the nature of the data. It was felt that LMM was the most appropriate approach for the data that was produced. While verification of assumptions is emphasised in traditional statistical methods, this may not be the case in LMM. However, the impact that ignoring these assumptions has on model accuracy is unclear and there is a strong advocacy for their use (Fagundes, Glaser, & Kiecolt-Glaser, 2013; Salonna et al., 2012). Based on this evidence we are confident in the final models presented in this study. We feel that our findings significantly contribute to the impact of Men’s Sheds on cardiac
autonomic function and provide practical evidence that may be used in developing interventions or in further research.

8.7.3 Conclusions

In conclusion, this study has for the first time confirmed that Men’s Sheds can modulate cardiac autonomic tone by enhancing the vagal activity and reducing the sympathetic activity. Although the empirical results should be interpreted with caution as they were subject to the study design limitations, it is important to highlight that this study served as a pilot study that allowed assessment of trends in the data and a larger study can be suggested based on these findings. Recall also that this thesis is a mixed methods research, in which the combination of qualitative and quantitative approaches has the potential to overcome the limitations of adopting singular methods. Specifically, both methods can be used to provide a comprehensive picture of the health impacts of Men’s Sheds. The next chapter will discuss the process of qualitative and quantitative data integration, and show how the mixed methods provide novel insights into the impact of Men’s Sheds of the health of the men involved, which was revealed here.
9 Chapter 9: Data Merging and Discussion

The major benefit of conducting a mixed methods study is the ability to triangulate and complement the findings from various research instruments while highlighting the advantages and minimising the disadvantages of each research instrument. This chapter presents the merged results of the in-depth interviews, evaluation of resting HRV, cortisol levels, resting blood pressure and heart rate and survey research instruments used in the study. First, the emergent themes and conclusions from the qualitative analysis will be summarized, followed by the overall results from the quantitative analysis. For clear presentation, the two types of data will be converged in the form of a side-by-side visual matrix. The chapter will end with a discussion of the areas of confirmation, enhancement, and contradiction between the two strands of data.

9.1 Summary of Qualitative Analysis and Emergent Themes

The qualitative study aimed to explore and interpret the lived experience of 15 men involved in Men’s Sheds. The philosophical hermeneutics of Gadamer (2004) and the ideas of van Manen (2001) underpinned this study. The meaning and understanding of the everyday experience of men involved in Men’s Sheds was achieved through interpretation of the participants’ stories. Data were generated using in-depth interviews audio-recorded from participants. The interviews were transcribed verbatim and analysed, then interpreted using thematic and narrative analysis. The results of the qualitative study suggest that social support and connectedness followed by purpose in life, participation in activities, and self-esteem are the most vital psychosocial resistance resources provided by Men’s Sheds. These four psychosocial resistance resources made the themes Being-valued-in-an-everyday-world and Being able to recover readily from life’s adversities. Together these themes are characterised by the expression: regaining resistance resources and sense of meaningfulness to maintain health.
The participants in this study reported that the supportive engagement with others in the sheds and the experience of being cared for and valued-in-the-everyday nourished their wellbeing and made them flourish despite life stressors. All the participants in my study described undergoing stressful experiences such as grappling with the consequences of unemployment, retirement, deaths of loved ones, as well as loss of other human and material resources, and they reflected on their adversity, yet the experiences of being valued, together with the resulting sense of trust and affirmation of one’s efforts provided them with a sense of purpose. Above all, the qualitative findings revealed the sheds are a source of enjoyable and meaningful activities. In this way, Men’s Sheds provided a hanging out space for men to connect with other men while retaining a sense of being at ‘work’.

Finally, the findings revealed that opportunities for the participants to form and maintain relationships with their supportive friends in Men’s Sheds protected and enhanced their self-esteem.

These four aforementioned psychosocial resistance resources protected the health and wellbeing of the men involved in Men’s Sheds. In this way, the participants confirmed Men’s Sheds are a salutogenic venture. Future research must employ a biopsychosocial perspective to examine if these factors are indeed responsible for the formation and the maintaining of health in the face of a microbiological and psychosocial entropic reality. For instance, linked to these psychosocial resistance resources were the claims from the participants that Men’s Sheds helped reduce the stress levels including depression. Although it was beyond the scope of the qualitative study to test these associations, quantitative research is needed to examine if belonging to Men’s Sheds attenuates stress levels and lead to a movement towards the healthy end of the health-dis-ease continuum. Without this research focus, there is a danger that the potential for benefit to the health and wellbeing of Men’s Sheds based on a PNI approach centred in provided and perceived social support will not be incorporated into future male health policy and practice.
9.2 Summary of Quantitative Analysis and Results

The quantitative study evaluated if participation in Men’s Sheds could improve physiological and psychological measures of stress, in a cohort of 33 men involved. All outcome measures were collected at baseline (beginning of involvement in Men’s Sheds) as well as at after 6 months participation in the Men’s Sheds, using the same procedures. The primary outcome was the SDNN component of HRV. Secondary outcomes included additional HRV parameters, cortisol levels, blood pressure, heart rate and psychological indices (i.e. state and trait anxiety and HRQoL).

Linear mixed-effects models (LMM) revealed that SDNN increased after participation in Men’s Sheds ($p = 0.013$) suggesting lowered sympathetic and increased parasympathetic nervous system activity (i.e. reduced physiological stress). A significant but modest relationship was observed between most HRV parameters and participating in Men’s Sheds. The participants exhibited significantly decreased LF Power ($p = 0.04$) and increased HF Power ($p = 0.00$), and reduced LF-HF Ratio ($p = 0.01$) and pNN50 ($p = 0.03$). Other HRV measures failed to change. Morning and evening cortisol levels were significantly reduced. These effects were independent of age, marital status and frequency of attendance in Men’s Sheds. There was no association between anxiety or HRQoL and HRV measures.

These findings indicate that participation in Men’s Sheds may reduce physiological and psychological stress. However, caution must be taken in interpreting these results as the study was small and did not include a control group with a cohort of men not involved in Men’s Shed. Despite the quantitative study design limitations, it is important to highlight that this study served as a pilot study that allowed assessment of trends in the data and a larger randomized control study can be suggested based on these findings. Moreover, this thesis is a mixed methods research, in which the combination of qualitative and quantitative approaches has the potential to overcome the limitations of adopting singular methods. Thus, both methods can be used to overcome the weakness of another (Johnson & Onwuegbuzie, 2004).
9.3 Merging of the Qualitative and Quantitative Data

In a convergent parallel mixed methods design, the final stage involves converging the two data strands in order to create an understanding of the research problem. The aim is to ensure “the end product is more than the sum of the individual quantitative and qualitative parts” (Bryman, 2007, p. 8). The reason for collecting both strands of data in the context of this study was to provide a richer understanding of the impact of participating in Men’s Sheds on the health and wellbeing of the men involved. The mixed methods research question for this study was: To what extent do the quantitative results on cardiac autonomic function, cortisol level, resting hemodynamic measures and psychological health status intersect with the perceptions of social inclusion shared by the men involved in Men’s Sheds?

In order to answer the mixed methods research question for this study, a data convergence matrix displaying the qualitative and quantitative results in a side-by-side summary was constructed (Creswell & Plano Clark, 2011). Use of a matrix to present data is acknowledged as an effective way of reducing multiple types of data more systemically. Presenting both strands of data side-by-side allows for synthesis and comparisons and helps present and organise information coherently (Miles & Huberman, 1994). Above all, it allows the reader to see how both the qualitative and quantitative data provide evidence for the research questions or the variables being presented (Bazeley, 2009a; Creswell & Plano Clark, 2011).

Initially, I conceived developing a matrix centred on the concept of salutogenesis (Antonovsky, 1979) as the theory shaped this study from conception to the final stage of analysis. The organization of this matrix was to be a table consisting of the key concepts of the salutogenic theory - that is, the sense of coherence and general resistance resources (GRRs, with corresponding columns for qualitative data and quantitative data to display how the effects of participating in Men’s Sheds appeared in each strand of data analysis. As I analysed each strand of data separately, I decided that this type of matrix would not be useful to compare the data for two
reasons. First, the qualitative data analysis mainly revealed there are some GRRs, which cannot be reliable measured. Second, the quantitative data collection only evaluated the effect of one GRR, social support, on cardiac autonomic function, cortisol level, resting hemodynamic measures and psychological health status. Consequently, I decided to organise the matrix according to the biopsychosocial model of Men’s Sheds, which aligns with the purpose of the study.

The biopsychosocial model represents the interactions between biological, psychological, and social factors (Engel, 1977; Hoffman & Driscoll, 2000). As already mentioned the purpose of mixing the qualitative and quantitative data was to explore the interrelationships among the biomedical factors (cardiac autonomic function, salivary cortisol level and resting hemodynamic factors); biosocial factors (gender) and psychosocial factors (social support, connectedness, anxiety and quality of life) as a result of participating in Men’s Sheds. As gender, a biosocial factor, is inherently a part of maleness and all the participants bared biological and physiological characteristics that define men, only biological and psychosocial factors were considered. I used the themes that emerged from the qualitative data analysis and the a priori factors from the quantitative research questions to model these biopsychosocial factors. For purposes of consistency and clarity, they will be referred to as factors in the matrix.

The factors listed in Table 9.2 provide the biopsychosocial framework for the data convergence matrix to follow. Data that correspond to each factor will be presented. The first column of the matrix presents the biopsychosocial factors. To facilitate readability, sub-factors were created for factors that generated multiple data examples and are reported in the second column. The third column presents qualitative data and the fourth column presents quantitative data; some areas have only one type of data associated with them. The final column of the matrix indicates how the two data relate to each other in convergence. The fourth column of the matrix shows the data convergence labels: confirm, contradict, mixed, and enhance adopted from Fitzpatrick (2011), which shows the nature of the convergence of the qualitative and quantitative results.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Sub-factors</th>
<th>Qualitative data type</th>
<th>Quantitative data type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biomedical</strong>&lt;br&gt;Vagal tone and physical health</td>
<td>Cardiovascular Health</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>Time and frequency domain measures of HRV</td>
</tr>
<tr>
<td></td>
<td>Maintenance of Blood Pressure</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>Heart rate and Blood Pressure measures</td>
</tr>
<tr>
<td></td>
<td>Recovery after myocardial infarction (MI)</td>
<td>Narratives of Wellness: Springs of Wellness</td>
<td>Time and frequency domain measures of HRV</td>
</tr>
<tr>
<td></td>
<td>Vagal activity and quality of life</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>Time and frequency domain measures of HRV, SF-36</td>
</tr>
<tr>
<td></td>
<td>Vagal activity and positive affectivity</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>Time and frequency domain measures of HRV, STAI</td>
</tr>
<tr>
<td></td>
<td>Stress levels</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>Cortisol Reactivity</td>
</tr>
<tr>
<td></td>
<td>Reducing stress levels and improving quality of life</td>
<td>Theme: Being able to recover readily from life’s adversities</td>
<td>Correlations between cortisol levels and HRQoL</td>
</tr>
<tr>
<td><strong>Psychosocial</strong>&lt;br&gt;Social support as a determinant of health</td>
<td>Perceived social support</td>
<td>Theme: Being able to recover readily from life’s adversities</td>
<td>SF-36 and STAI questionnaires</td>
</tr>
<tr>
<td></td>
<td>Sense of belonging</td>
<td>Narratives of Wellness: Medication is Important and so is Being-valued-in-an-everyday-world</td>
<td>SF-36 and STAI questionnaires Basal levels cortisol correlated with STAI</td>
</tr>
<tr>
<td></td>
<td>Living a purpose-driven life</td>
<td>Theme: Being-valued-in-an-everyday-world</td>
<td>No quantitative match</td>
</tr>
<tr>
<td></td>
<td>Building self-esteem</td>
<td>Narratives of Wellness: I am Happy and Well- The Narrative of being valued</td>
<td>SF-36 and STAI questionnaires</td>
</tr>
<tr>
<td></td>
<td>Engaging in meaningful activities</td>
<td>Narratives of Wellness: Springs of Wellness-</td>
<td>SF-36 and STAI questionnaires</td>
</tr>
</tbody>
</table>
When qualitative and quantitative data directly addressed the same phenomenon or question and clearly confirmed or contradicted one another, the data were labelled ‘confirm’ or ‘contradict’. In situations where part of the qualitative and quantitative data regarding a phenomenon or topic confirmed one another while also contradicting each other in some parts, the data was labelled as having a ‘mixed’ convergence. However, if the data provided similar perspectives but did not directly confirm one another, they were labelled as ‘enhancing’ one another. The data convergence matrix is presented in Table 9.3 below.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Sub factors</th>
<th>Qualitative Data</th>
<th>Quantitative data</th>
<th>Data Convergence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biomedical</strong></td>
<td>Vagal tone and physical health</td>
<td>There was such a well-established relationship between being valued in Men’s Sheds and good cardiovascular health (e.g. Fred’s assertion that his blood pressure and cholesterol were improved after participation in the shed). Most participants reported good health as a result of participating in Men’s Sheds.</td>
<td>Six months of involvement in the Men’s Shed significantly increased SDNN ((p = 0.013)), suggesting reduced physiological stress and increased vagal tone. This means participating in Men’s Sheds protected the men from stress-related cardio metabolic diseases.</td>
<td>Confirm</td>
</tr>
<tr>
<td>Maintenance of Blood Pressure</td>
<td></td>
<td>Most participants reported encountering with a very supportive environment in the sheds, which enabled them to manage their worries more effectively and this helped reduce their blood pressure. For instance, Stan, a semi-retired man reported that his doctor halved his blood pressure tablets and claimed it was due to the support he received in the shed.</td>
<td>There was a statistically significant relationship between blood pressure and participating in Men’s Sheds. Systolic BP ((p = 0.041)) and Diastolic BP ((p = 0.001)).</td>
<td>Confirm</td>
</tr>
<tr>
<td>Recovery after myocardial infarction (MI)</td>
<td></td>
<td>Participants like Charlie described belonging to Men’s Sheds as promoting their recovery from heart failure as he said, “I suffered myocardial infarction and ended up in ICU at [hospital]. Coming to the shed has helped with my heart issues. It has also helped me stop smoking and my blood pressure never drops as it did before”</td>
<td>There was a statistically significant relationship between PNN50 and intervention at the 0.05 level ((p = 0.033)). This means that participating in Men’s Sheds promotes recovery in patients surviving acute myocardial infarction.</td>
<td>Confirm</td>
</tr>
<tr>
<td>Vagal tone and psychological wellbeing</td>
<td>Vagal activity and quality of life</td>
<td>Social buffering of the HPA axis</td>
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<tr>
<td>Participants reported managing their worries much better when they came to a group of supportive mates. For instance Matt said coming to the shed caused his body to relax and his mind and spirit to be at peace even when he is under pressure or undergoing stressful situations and described the feeling as improving his wellbeing.</td>
<td>High frequency power (HF, 0.15–0.35 Hz) was significantly ($p = 0.006$). High HF power is a conventional marker of vagal function. This means participating in Men’s sheds increased the ability of the heart to handle the ever-present stresses and relaxations were placed on the body. However, there was no correlation between HF and the health-related quality of life measures, which could have signified the impact of parasympathetic enhancement on psychological health.</td>
<td>Mixed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stories from the participants revealed a positive association between positive affect and health outcomes. Being valued and respected in Men’s Sheds reduced their stressed levels and enhanced positive affectivity as demonstrated by Eric a frail 87-year-old man, who despite a physical illness was enthusiastic, energetic, confident, active, and alert, and believed his health had significantly improved as a result of participating in Men’s Sheds</td>
<td>There was no statistically significant relationship between RMSSD and participating in Men’s Sheds ($p = 0.108$). More so there was a negative correlation between RMSSD and the State-Trait Anxiety Inventory.</td>
<td>Contradict</td>
<td></td>
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<tr>
<td>According to Matt, participating in Men’s Sheds “helps reduce stress levels” Being valued and respected by a supportive group of friends were associated with narratives of relaxation and stress relief. Most participants found that they were more relaxed and less overwhelmed after joining Men’s Sheds.</td>
<td>Participating in Men’s Sheds significantly reduced the cortisol levels in the evening ($p = 0.00$)</td>
<td>Confirm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Psychosocial-Action on the social determinants of health</strong></td>
<td><strong>Reducing stress levels and improving quality of life</strong></td>
<td>**Narratives of wellness were associated with purging unnecessary thoughts and being able to control emotions and manage life stressors in-the-everyday-world. For instance, George reported that despite the challenges he was going through, participating in Men’s Sheds enhanced his quality of life and decreased his anxiety. He further reported that “now I do not get colds willy-nilly as I used to. My general health has improved since joining the shed and I am very happy”</td>
<td><strong>Although the cortisol levels decreased as a result of participating in Men’s Sheds, these decreases were not positively and significantly related to any health-related quality of health measures. This means that men with reduced cortisol levels could still have a low quality of life.</strong></td>
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<tr>
<td><strong>Social support as a determinant of health related quality of life</strong></td>
<td><strong>Psychosocial-Action on the social determinants of health</strong></td>
<td><strong>Most participants revealed social support from other men in Men’s Sheds was an important resource for coping with difficult circumstances and adjusting to the psychological as well as social demands placed on them in the everyday life. As John said, “we always talk and support each other as men and feel better about our problems. The hardship I overcame motivated me to be strong, struggle and never give up whatever the case might be, that was my motto and I am well”</strong></td>
<td><strong>There was a positive and significant relationship between participating in Men’s Sheds and HRQoL measures. There was a statistically significant relationship between participating in Men’s Sheds and PCS of the SF-36 (p = 0.011) as well as the MCS (p = 0.001).</strong></td>
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</tr>
<tr>
<td><strong>Sense of belonging</strong></td>
<td><strong>Psychosocial-Action on the social determinants of health</strong></td>
<td><strong>The qualitative findings revealed a strong relationship between sense of belonging and overall mental health, self-efficacy, self-esteem, lower levels of stress, depression and anxiety, better coping, improved resistance to disease, and generally better physical health.</strong></td>
<td><strong>The SF-36 provides multiple scores across a broad range of psychological symptoms that examines quality of life across multiple dimensions and provided beneficial data for study in exploring belongings possible impact. Overall both physical and mental components of SF-36 were significant and positively associated with belonging to Men’s Sheds.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Living a purpose-</strong></td>
<td><strong>Psychosocial-Action on the social determinants of health</strong></td>
<td><strong>Participants in this study described Men’s</strong></td>
<td><strong>No clear cut quantitative parallel,</strong></td>
<td></td>
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<tr>
<td>driven life</td>
<td>Sheds as providing a support system upon which the men relied in developing purpose in life. For instance, John said, “I became depressed and unmotivated to do anything and felt I had no purpose, but when I joined the shed, the support in the shed conferred an immediate sense of purpose... Now I am not depressed and I am motivated to live a purpose driven life.” Most participants in this study revealed the critical importance of experiential support in developing purpose in life.</td>
<td>however, there was a statistically significant relationship between participating in Men's Sheds and reducing State Anxiety ($p = 0.000$) and Trait Anxiety $p = 0.000$).</td>
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<tr>
<td>Building self-esteem</td>
<td>Most participants had poor self-esteem before joining Men’s Sheds. Their self-esteem was affected by physical ill health, negative life events, deficient relationships, and a general sense of not being valued. This feeling of not being valued caused considerable stress in the lives of the men as exemplified by George’s narrative below: “I guess I did not expect early retirement to be stressful. Worse no one cares about you anymore and all your mates are either interstate or busy with their lives. The whole experience was like being taken from a place where everyone see a useless old man and placed in a world where people see a useful human being. I felt human again. It is for this reason that I think you are doing a good job of alerting people about the sheds. They are good places to be (George, 68)”</td>
<td>Higher levels of state anxiety at baseline were associated with higher cortisol levels in the evening at baseline. Spearman's correlation coefficient, $r_s$, 0.361, ($p = 0.03$). However, at 6 months there was a statistically significant relationship between participating in Men’s Sheds and State Anxiety ($p = 0.000$) and Trait Anxiety $p = 0.000$). This means the experiences of being valued and respected in Men’s Sheds built their self-esteem, and improved their wellbeing.</td>
<td></td>
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</tr>
<tr>
<td>Engaging in meaningful activities</td>
<td>Participants reported that Men’s Sheds created ‘work’ for them because it provided them with hands-on activities they enjoyed doing. For the retired men, Men’s Sheds provided meaningful male specific activities</td>
<td>There was a positive and significant relationship between participating in Men’s Sheds and improvements in all measures of quality of life. There was a positive and significant</td>
<td></td>
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</tr>
</tbody>
</table>
that they used to manage the loss of work due to retirement. This fostered their sense of masculinity and impacted positively on their health and wellbeing.

| relationship between decreased levels of state anxiety ($p = 0.000$) and trait anxiety ($p = 0.000$) and participating in Men’s Sheds. This means that engaging in meaningful activities diminished their levels of state and trait anxiety and potentially improved their quality of life. |
9.4 Areas of Confirmation or Enhancement in the Data

There were seven areas of confirmation or enhancement in the data under both biological and psychosocial factors. Under the biological factors, areas of confirmation were observed in the protection of cardiovascular health, promoting recovery after myocardial infarction, maintenance of blood pressure and reducing stress levels. Under the psychosocial factors areas of confirmation or enhancement were observed in social support as a determinant of health related quality of life, sense of belonging enhanced the ability to deal with stressors, living a purpose-driven life, building self-esteem and engaging in enjoyable and meaningful activities. These areas of confirmation or enhancement are briefly discussed below.

9.4.1 Vagal Tone and Physical Health

First, participants expressed the feeling of being-valued-in-the-everyday life as promoting their health and wellbeing. Most participants tended to report improvements in cardiovascular function, for instance, normal blood pressure, cholesterol levels or blood sugar levels. Uncontrolled hypertension, hyperlipidemia and diabetes can contribute to coronary heart disease (Appels, 2004; Black, 2003). Belonging to a network of supportive friends help protect against cardiometabolic diseases. Quantitative data indicated a positive relationship between participating in Men’s Sheds and the SDNN parameter of the HRV. This means that autonomic tone may be one of the mechanisms linking participating in Men’s Sheds to a lower rate of cardiovascular events. Qualitative data confirm that the men involved in Men’s Sheds reported fewer medical events related to cardiovascular health, and if they did, the supportive environment in the shed conferred them resilience to bounce back stronger. They described being valued as salutogenic, as in Ron’s comment “When I noticed how supportive my friends were, I began to realise my abilities of quick recovery from illnesses” (Ron, 74). Fostering resilience is one way that Men’s Sheds protect the cardiovascular health of the men involved. This finding will be discussed more in Chapter ten.
The second area of confirmation or enhancement was in the sub-factor of promoting recovery after myocardial infarction. Phil reported, “I had problems with my heart, and the doctor told me I had heart failure. Last year I suffered a myocardial infarction and ended up in ICU at [hospital]. Coming to the shed has helped with my heart issues. It has also helped me stop smoking, and my blood pressure never drops as it did before (Phil, 65). To objectively confirm these qualitative findings, 6-months of involvement in the Men’s Shed significantly increased PNN50 ($p = 0.033$). The estimated marginal means of PNN50 were 26.29 ($SE = 1.12$) and 23.87 ($SE = 1.02$) at baseline and after a six months period, respectively. This means that participating in Men’s Sheds preserves vagal activity after acute myocardial infarction. The enhanced parasympathetic tone may be a part of the beneficial mechanisms responsible for the reduction in mortality in men involved in Men’s Sheds. This relationship will be discussed more in Chapter ten.

There was a significantly positive association between participating in Men’s Sheds and both systolic and diastolic blood pressure. After adjusting for age, marital status and frequency of attending, the estimated marginal means of Systolic BP were 143.13 ($SE = 3.84$) and 141.19 ($SE = 3.63$) at baseline and after a six months period, respectively ($p = 0.041$). The estimated marginal means of diastolic BP were 87.92 ($SE = 1.48$) and 85.68 ($SE = 1.33$) at baseline and after a six months period, respectively ($p = 0.001$). The qualitative findings confirmed and complemented these objective measures of blood pressure. Most participants reported that the supportive environment in the sheds enabled them to manage their worries more effectively, and this helped reduce their blood pressure. For instance, Stan, a semi-retired man reported that his doctor had halved his blood pressure tablets and claimed it was due to the support he received in the shed. He narrated:

I retired back in August last year [2012], and I found that even though I was quite happy to - I loved my work but I was quite happy to finish up. But after a few months I found that the one thing I did miss was the comradeship of my co-workers. I got so stressed and ended up being diagnosed with depression and my blood pressure got worse. Coming here has helped with my depression and
blood pressure. I've been on blood pressure tablets for the past 12 years, however, since I started coming here I've had to halve them with my doctor's consent. So I've halved my blood pressure tablets. Now is that totally from Men's Shed or is that partly from Men's Shed and partly from leaving work, I'm 100% sure it is totally from the Men's Shed. My encounter with a very supportive environment has enabled me to manage my worries more effectively. The whole experience is therapeutic (Stan, 55)

9.4.2 Social Buffering of the HPA axis

The final biological area in which the two data types enhanced each other was in the social buffering of the HPA axis as represented by the sub-factor of reducing stress levels. Having close friends in the sheds had far-reaching benefits for the health of the men involved. They reported that the strong social support network was critical to helping them through the stress of tough times, whether they were having a bad day or a year filled with loss or chronic illness. For instance qualitative findings revealed that most men were grappling with the consequences of unemployment, retirement, deaths of loved ones as well as loss of other human and material resources, and reflected on the positive role played role in supporting the men deal with their daily hassles in life. As Fred commented, “the blokes are caring here, and they have provided enough help for me to keep all my worries from overwhelming me”. To complement these narratives objectively, participating in Men’s Sheds significantly reduced the cortisol levels. For instance the estimated marginal means of cortisol in the evening reduced from 0.27 (SE = 0.04) to 0.05 (SE = 0.02) (p = 0.000).

9.4.3 Social Support as a Determinant of Health

The first psychosocial area in which the two data types enhanced each other was in the sub-factor of social support as a determinant of health-related quality of life. Perceived social support was associated with quality of life in both strands of data. Participants’ stories
revealed that participating in Men’s Sheds provided them with a sense of belonging, an increased sense of self-worth and a feeling of security, which contributed enormously to their psychological wellbeing. Simon and Peter said, spending time with other men not only helped ward off loneliness but also reinforced the idea that they were valued and good people to be around. Peter summarized this experience succinctly by saying, “I was valued and appreciated, and my quality of life improved significantly” (Peter, 63). Quantitatively, there was a positive and significant relationship between participating in Men’s Sheds and quality of life measures. Both the PCS ($p = 0.011$) and the MCS ($p = 0.001$) of the SF-36 were statistically significant even after controlling for age, marital status and frequency of attendance.

The second psychological area of confirmation or enhancement was in the sub-factor of which showed the sense of belonging enhanced the ability of the men to deal with everyday stressors. Spending quality time with other men in Men’s Sheds fostered the feeling of belonging and having value, which went a long way toward coping with daily hassles and other intensely painful emotions. As Joe narrated, sense of belonging helped him manage his worries better. To complement these qualitative findings, both physical and mental components of SF-36 were significant and positively associated with belonging to Men’s Sheds.

The final area in which the two data types enhanced each other was in the sub-factor of building self-esteem and reawakening the giant within. Qualitative findings revealed that before participating in Men’s Sheds, most men were stressed and felt unworthy. Their opinion of themselves was often negative, especially after retirement, retrenchment or unemployment. As Erick said, “I felt the society did not value me anymore” (Eric, 82). Paul also explained “it was not until I joined the shed that I felt respected, which has been key to my emotional wellbeing” (Paul, 69). Similarly, higher levels of state anxiety at baseline were associated with higher cortisol levels in the evening at baseline. Spearman’s correlation coefficient, $rs$ was $0.361$, ($p = 0.03$).
Participating in Men’s Sheds brought an awareness of self and a feeling of being in a world that acknowledges the contribution these men make to society and their families. It had no resemblance to the everyday world before joining the sheds where they experienced that they were not valued. Rather, it was accompanied by feelings of which participants consistently perceived the environment in the shed as an important part of their self-worth, primarily because they were valued. These feeling of self-worth aroused their usual self (the giant within) and enabled them to cope better with stressors. Similarly, there was a statistically significant relationship between participating in Men’s Sheds and State Anxiety ($p = 0.000$) and Trait Anxiety $p = 0.000$). This means the experiences of being valued and respected in Men’s Sheds built their self-esteem, reduced their anxiety and improved their wellbeing.

9.5 Areas of Contradiction in the Data

There were two areas of contradictions in the data. The first area of contradiction was in the sub-factor of increasing vagal activity and enhancing positive affectivity. The second area of contradiction was in the sub-factor of the association between vagal activity and quality of life. These areas of contradiction are described below.

9.5.1 Increasing Vagal Activity and Enhancing Positive Affectivity

First, there was a contradiction in the quantitative and qualitative data regarding the relationship between increased vagal activity and positive affectivity. Being valued and respected in Men’s Sheds enhanced positive affectivity as demonstrated by Eric a frail 87-year-old man, who despite a physical illness was enthusiastic, energetic, confident, active, and alert, and believed his health had significantly improved as a result of participating in Men’s Sheds. There were many other men who felt the supportive environment made them think positive about themselves, which resulted in improved psychological health. Contrary, the
RMSSD parameter did not change after six months. I would have expected the RMSSD to change after participating in Men’s Sheds and also that the change be significant and positively associated with the STAI measures.

The RMSSD, a measure thought to gauge general neurocardiac activity associated with autonomic regulation is the closest tool to measure an individual’s ability to regulate affect. This is because affect is determined in part by psychophysiological processes, in particular, their vagally mediated capacity to suppress sympathetic influence on the heart (Wright & Gendolla, 2012). Although the SDNN, PNN50 and HF power, the other representatives of parasympathetic modulation did change, they had a very weak correlation with the state and trait subscale reflective of positive affect. The RMSD was also negatively associated with STAI subscales, state-trait ($p = 0.06$) and trait ($p = 0.09$). This may suggest the intervention period must be increased to more than 26 weeks as the majority of the participants involved in the qualitative study had on average been involved in Men’s Sheds for much longer as compared to the average cohort in the quantitative study.

### 9.5.2 Association Between vagal activity and quality of life

Participants reported that they felt good when they came to a group of supportive friends. Most reported surviving myocardial infarction and recovering from congestive heart failure, diabetic neuropathy, depression and post-traumatic stress disorder. These are conditions often associated with reduced HRV (Agelink et al., 2002; Henry et al., 2010; Thayer & Sternberg, 2006). The participants also reported improved psychological wellbeing as a result of recovery or better managing their chronic conditions. In other words, the qualitative findings suggest that improved vagal activity is associated with quality of life. Contrary, there was no association between increased vagal activity and quality of life measures in the quantitative study. The HF power was negatively associated with both the PCS ($p = 0.60$) and MCS ($p= 0.19$) subscales of the SF-36.
9.6  **Summary of Data Convergence Matrix**

The use of a data convergence matrix did not only provide a visual means of condensing the quantitative and qualitative data for comparison and synthesis, but helped in leveraging the strengths of mixed methods. Positioned around the biopsychosocial perspective, the data convergence matrix was defined by the emergent themes from the qualitative data collection and the a priori factors collected during the quantitative portion of data collection. Except for two factors that stood alone, there were no quantitative parallels to the data presented; most factors had a parallel from each strand of the data set. All these areas of data convergence will be discussed in Chapter 10.

9.7  **Chapter Summary**

This chapter presented the mixed methods analysis of the qualitative and quantitative data. To begin with, a summary of the qualitative and the quantitative strands of data were provided. The strands of data were then put side-by-side in a convergence matrix for comparison and synthesis. There were seven areas of confirmation or enhancement in the data under both biological and psychosocial factors. There were seven instances of confirmation or enhancement, and two contradictions in the responses from the qualitative data and the quantitative data that emerged from the one-group pre-test post-test study. A discussion of these results will be presented thematically in Chapter Ten, along with implications for men’s health and recommendations for future research.
Chapter 10: Discussion and Conclusion

It will be recalled that the purpose of this mixed methods study was to examine the impact of participation in Men’s Sheds on the health and wellbeing of the men involved. A novel aspect of this investigation was the consideration of men’s experiences of participation in Men’s Sheds alongside quantifying how participation impacts physiological measures of stress (HRV, salivary cortisol, and resting heart rate and blood pressure) and psychological outcomes (anxiety and HRQoL). This chapter discusses the mixed methods results, recommendations for future research, and implications for men’s health policy and practice.

10.1 Discussion of Mixed Methods Results

The independent findings from the two strands of data, both of which were analysed separately provide solid insight into how participation in Men’s Sheds impacts on the health and wellbeing of the men involved. As presented in Chapter 9, each strand of data complemented and enhanced the other strand. The integration of the quantitative and qualitative data showed that Men’s Sheds create a supportive environment, which foster health and that social support is an important social determinant of men’s health. Specifically, the three merged areas included effects on physical and psychological wellbeing, social buffering of the HPA axis and the action on the social determinants of health. In these merged areas, the analyses of several sub-factors appeared to converge. There were, however, a few instances of the merged areas where the analyses appeared to diverge, or contradict each other. Each of these areas will be described below followed by a discussion as to why these contradictions may have occurred.

First, the merged data indicated a strong association between participating in Men’s Sheds and improved physical and psychological health outcomes. There were three areas where each strand of data complemented and enhanced the other strand on this association. These included the impact of participating in Men’s Sheds on
cardiovascular health, recovery from myocardial infarction and maintenance of blood pressure. Most men in the qualitative study described having access to social support in the sheds as important to their general health. As a result of this, most reported improved health outcomes including recovering well from various cardiometabolic diseases. For instance Fred reported his blood pressure and cholesterol levels normalised as a result of participating in Men’s Sheds. Charles also reported good recovery after suffering a myocardial infarction. In the quantitative analysis, a positive relationship between participating in Men’s Sheds and an increase in HRV measures was observed. An increase in HRV measures is considered to be a positive sign as this has been shown to have a predictive value for protecting cardiovascular health and is also strongly associated with recovery following myocardial infarction (Kemp & Quintana, 2013).

Studies have established the mechanisms underlying the association between positive social connections and cardiovascular health (Kok et al., 2013). For instance, Kok and colleagues found that increased perceptions of social connections produced increases in vagal tone, a proxy index of cardiovascular. In the current study, the men reported increased positive emotions as a result of being valued by their friends in Men’s Sheds. Fittingly, the quantitative findings revealed that participating in Men’s Sheds resulted in significant increases in the time domain measure of SDNN and PNN50. There were also positive changes to the frequency domain measures of LF, HF, and LF-HF ratio, suggesting a reduction in physiological stress (i.e. increased vagal tone).

These findings document not only that participating in Men’s Sheds build and protect cardiovascular health, as indexed objectively by increased vagal tone, but also how they do so. Employing an interpretive study enabled me to understand that men’s perceptions of their positive social connections with others in the sheds accounted for the causal link between positive emotions and a reduction in physiological stress. As described in Chapter 7, Men’s Sheds provided the participants the space to belong, the equipment to utilise their talents, access to advice and support along and self-motivation to complete worthwhile tasks. It is
possible that these lived experiences of being socially included in Men’s Sheds, which resulted in **Being-valued-in-an-everyday-world** and **Being able to recover readily from life’s adversities** increased the vagal tone. A myriad of studies support the link between social support and autonomic function (see, for example, Cosley et al., 2010; Hopp et al., 2013; Maunder et al., 2012a).

Examination of other physical health indices (namely, blood pressure and cortisol) favoured the health-protective role of social inclusion provided by Men’s Sheds, which independently predicted both the maintenance of blood pressure and attenuation of cortisol reactivity. Complementing this prospective correlational evidence, most participants found the supportive environment in the sheds enabled them to manage their worries more effectively, and this helped reduce their blood pressure and blood sugars. For instance, Stan, a semi-retired man reported that his doctor had reduced the dosage of his blood pressure tablets and claimed this was due to the support he received in the shed.

Intriguingly, recent prospective evidence suggests that social connections, which provide psychological and material resources has a positive influence on health-related quality of life. Building on findings that belonging to a network of supportive friends increases the sense of coherence and positively affects the wellbeing of a person (Wang, Hay, Clarke, & Menahem, 2014). The quantitative findings revealed a positive relationship between participating in Men’s Sheds and improved health-related quality of life. More strikingly, data from the qualitative findings also revealed that the men, most who suffered from chronic diseases, felt valued and supported in the sheds and reported greater improvements in their wellbeing over time. In short, participating in Men’s Sheds was a resource in everyday life and was used as a strategy to self-provide social support and improves one’s quality of life.

As regards men suffering from various chronic diseases, this result is partly contradictory to most of the literature that has focused on the traditional approach to health care, particularly concerning merely diagnosing and managing diseases. This unexpected result may partly be explained by the salutogenic approach of this
study. By turning the health issue around and looking at what brings health and what resources are central to foster wellbeing in the everyday life, instead of merely diagnoses and management of diseases, this finding advances a holistic vision of a health promotion – a salutogenic model of care (Macdonald, 2005). It is a model in which those involved in men’s health can consider what generates health and improves wellbeing or what makes people move in the direction of health.

Secondly, the merged data indicated a strong association between participating in Men’s Sheds and psychobiological mechanisms underlying the social buffering of the HPA axis. In the qualitative data, the men reported the stress-buffering effects of social relationships had on their health and wellbeing. They described having access to social support in the sheds as an important modulator of the many stressful events they encountered in their everyday lives. Most men reported that Being-valued-in-an-everyday-world by their friends in the Sheds increased their self-confidence and self-esteem, which contributed to better management of psychological stressors. In the quantitative analysis, a positive relationship between participating in Men’s Sheds and a reduction cortisol levels (evening cortisol, p=000) was found.

The above finding confirms previous research on the role of positive social relationships in dampening of the HPA axis response to stressors (Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003), particularly salivary cortisol levels (Rosal, King, Ma, & Reed, 2004). Social support is such a broad construct in the current literature, which makes it not clear which aspects dampen the HPA axis in psychological interventions (Hostinar, Sullivan, & Gunnar, 2014). Merging the two strands of data helped to identify the aspects of social support in Men’s Sheds that were an anti-stress remedy. While the quantitative revealed objective reductions in cortisol levels in the qualitative data, the participants commented on the importance of social anchorage, social participation and contact frequency in better managing their situations. Most important there was a statistically significant relationship between cortisol levels at wake-up and the frequency of attendance in Men’s Sheds
(p = 0.043). In other words, the more the men participated in Men’s Sheds, the higher the dampening of the HPA axis response to stressors.

Understanding the social buffering processes of Men’s Sheds is an important finding, as it positions the sheds as cascading positive effects across multiple biological and psychological systems. Positioning Men’s Sheds within the neurobiology of the HPA axis modulation presents an expanded view of men’s health, which as described in Chapter 2 has often focussed on a deficit model based on the phenomenon of ‘men behaving badly’. Rather it provides hints about the neurobiology that may be involved in the social buffering effect of social inclusion provided by supportive interventions such as Men’s Sheds. Empirically, both the qualitative and the qualitative data confirmed the social buffering effect of Men’s Sheds focusing on prefrontal cortical systems, emphasising the role of perceived social support in men involved.

Third, the merged data indicated a strong opportunity for Men’s Sheds to tackle the root causes of disease and health inequalities, and promote health. The positive interaction with the supportive environment in Men’s Sheds enabled the participants to act on various social determinants of health, which included stress, social exclusion, and unemployment. In these, the important role of social support and work (engaging in meaningful activities) in improving health and wellbeing was complemented and enhanced in both strands of data. In the qualitative data, the men commented that social support from other men in the sheds was an important resource for coping with difficult circumstances associated with retirement and loss. Before joining the sheds, the narratives of social exclusion, isolation and stress were very common in participants’ stories. However, the availability of social support in the sheds facilitated the growth and maintenance of health and enhanced the wellbeing of the men involved. Complementary, the quantitative data revealed a positive and significant relationship between participating in Men’s Sheds and health-related quality of life measures, PCS (p = 0.011) and MCS (p = 0.001).
Social support as a determinant of health provided these men with a strong feeling of belonging, a purpose in life and enhanced their self-esteem. These feelings led to reduced symptoms of anxiety and depression. Although there was no clear-cut quantitative parallel regarding sense of belonging and purpose in life, there was a statistically significant relationship between participating in Men’s Sheds and reductions in state anxiety ($p = 0.000$) and trait anxiety $p = 0.000$). Considerable interest has recently been directed at the relationship between anxiety and depression (Cho & Ryu, 2015; Ebesutani et al., 2015). Depression can make life seem empty and meaningless. This means reductions in anxiety could be associated with living a meaningful life.

The qualitative data revealed that most participants had poor self-esteem before joining Men’s Sheds. Physical ill health, negative life events, loss of relationships or death of loved ones, and a general sense of not being valued affected their self-esteem. The quantitative data also revealed higher levels of state anxiety at baseline were associated with higher cortisol levels in the evening, spearman's correlation coefficient, $rs$ was $0.361$, ($p = 0.03$). However, after participating in Men’s Sheds, the men commented that the supportive relationships facilitated the growth and maintenance of their health and improvements in wellbeing. To complement these findings objectively, the qualitative data revealed a statistically significant relationship between participating in Men’s Sheds and state anxiety ($p = 0.000$) and Trait Anxiety $p = 0.000$). This means the experiences of being valued and respected in Men’s Sheds built their self-esteem and improved their wellbeing.

Fourth, the merged data indicated a discrepancy in the relationship between decreased stress levels, vagal activity and health-related quality of life measures. In the qualitative data, the men commented that having access to social support in the sheds did not only modulate the potentially stressful events, but also improved their general health and wellbeing. However, there was no positive association between cortisol levels and health-related quality of life measures, which could have objectively strengthened the stress-buffering effects of social relationships and its association with other wellbeing measures. More so, while the qualitative data
revealed a strong association between how men felt about their physical health, particularly cardiovascular health and their subjective wellbeing, there was a weak association between vagal tone, affect and quality of life measures. It is possible that this area of contradiction between the qualitative and quantitative data may be attributable to a difference in the length of time these men were involved in Men’s Sheds. The quantitative study participants had only been involved in Men’s Sheds for an average of 10.52 weeks (SD= 9.59). Contrary the qualitative study participants had been involved in Men’s Sheds for at least three months as this period was sufficiently long enough for participants to formulate perceptions about social inclusion provided by Men’s Sheds.

The above contradictory result is unexpected and is contrary to several converging themes from neuroscience, behavioural medicine, and PNI that state people who have close, satisfying relationships tend to be healthier, happier individuals, have good quality of life and live longer lives. When discrepancies exist in a mixed methods study, Slonim-Nevo and Nevo (2009) recommended taking a complementary approach to dealing with conflicting results. A complementary approach allows researchers to “make credible and consistent sense of different aspects of their studies” (p. 111). Creswell and Plano Clark (2011) described several options for handling the situation. They recommended that if discrepancies exist in a mixed methods study, the researcher must examine the methodology used in collecting each strand of data and state the limitations of the study. Alternatively, they suggested collecting “additional data to help resolve the discrepancies or cite that they had more trust in the results of one form of data than the other (Creswell & Plano Clark, 2011, p.233). Adopting the first option, I propose that the contradictory results in the mixed methods convergence in the present study stems from methodological issues in the quantitative study.

Although the quantitative sample size was considered sufficient for analysing correlational data with linear mixed-effects model (Fathi et al., 2014), participants had been in the shed only for a short time, which could have contributed to the data discrepancies. A recent study showed a strong association between increased HRV
and markers of quality of life (Gonçalves, Farinatti, Gurgel, & Soares, 2014). In contrast, I did not find positive and significant correlations between HRV parameters and quality of life measures at six months follow up. The shorter duration of the intervention period may explain the apparently discrepant results. To overcome this limitation, future studies must employ a longer intervention period.

Though the intervention period was shorter, the results were statistically significant and consistent with other similar studies. The SF-36 scores improved in all eight domains of health, reaching significance in ‘mental health’ ($p = 0.001$) and approaching significance in ‘general health’ ($p = 0.011$). Importantly, cortisol levels decreased, and vagal tone improved, which makes correlations insignificant as they cannot infer causation (Cohen, Cohen, West, & Aiken, 2013). However, this is not to say correlations are not useful. They are useful as many cause-effect relationships are so subtle that they need to be firstly understood through correlations detected in observational data (Cohen et al., 2013).

Despite the above limitation, it is striking how well the narratives, the participants’ comments and the quantitative findings show in a convincing way how participating in Men’s Sheds supported the psychological and biological recovery from stress. It is clear that participating in Men’s Sheds modulated the cardiac autonomic function by enhancing vagal activity and decreasing the sympathetic activity of ANS, which protected the health and wellbeing of the men involved. Hence, there is an overwhelming convergence between the qualitative and quantitative results.

10.2 Overall Summary and Contributions of this Thesis

In order to understand the overall findings presented in this study, it is helpful to return once again to the original biopsychosocial model and the salutogenic theory as presented in chapter three. Essentially, health outcomes are understood in terms of a combination of biological, psychological, and social factors rather than purely in biological terms (Engel, 1977, 2013; Santrock et al., 2012). Most tested biomedical
and psychosocial factors showed in a convincing way that participation in Men’s Sheds improved the health and wellbeing of the men involved.

The current study is an initial step in highlighting the biopsychosocial model of Men’s Sheds. To my knowledge, this is the first study to explore men’s experiences of participation in Men’s Sheds alongside quantifying how participation impacts physiological measures of stress (HRV, salivary cortisol, and resting heart rate and blood pressure) and psychological outcomes (anxiety and HRQoL). The results provide evidence that stress levels may be initially elevated in men before participating in Men’s Sheds, due to social isolation and other hostile situations or environments, but later reduce when feeling supported by others. Accordingly, the study provides evidence for the adaption of a social determinants of health approach to men’s health (Macdonald, 2006). The results add to the well-documented literature of social support and its impact on health and wellbeing (Uchino, 2004; Uchino, 2009).

The current study also underscores the relevance of a salutogenic perspective and the application of the theory of SOC as it relates to men’s health. The salutogenic perspective adds breadth to the current and future potential research in men’s health in that it identifies positive factors within the environment, which facilitates the growth and maintenance of the health of men and their communities. This is very important as there is very little literature applying the specific salutogenic theory of in men’s health. Thus, the findings of this study provide a strong evidence base to adopt the salutogenic theory to explore the capacity of individuals to make good out of bad.

Overall, these findings confirm the biopsychosocial model of Men’s Sheds and are in line with the view that a major characteristic of a holistic approach to men’s health is creating environments that are genuinely concerned with fostering their health (Macdonald, 2005). Being valued and respected by a supportive group of friends led these men to believe that they can make the most of their situations. Thus, it may be possible that participating in Men’s Sheds creates confidence in men that their
“internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected (Antonovsky, 1979, p.123). In other words, the perceived availability of social support in the sheds as a GRR increases these men’s SOC, which is the key determinant in the maintenance of the health and wellbeing. A recent study found that social support was a key GRR that that strengthened SOC, which provides protection against anxiety and other psychological distress in vulnerable male populations (Lyons, Pitts, & Grierson, 2014).

As has been said, men’s health has tended to work within a deficit model, in which the main focus is the ‘pathological or pathogenic’ factors of men. Findings from this study confirm Macdonald’s call for practitioners to embrace a salutogenic model. In this case, Men’s Sheds seem to have increased the men’s capacity “to deal with even the most negative and hostile forces in their environment in a vigorous manner which resulted in the enrichment of the person rather than their diminishment” (Macdonald, 2005, p.83). One can challenge the pathological view of men’s health, which seeks to explain why men get sick and die younger than women and bring about a salutogenic framework that would acknowledge the role of social inclusion provided by Men’s Sheds in maintaining the health and wellbeing of the men involved.

10.2.1 Contributions of this thesis

This thesis makes a contribution to the development of mixed methods research in the field of men’s health by providing an example of how qualitative and quantitative approaches can be integrated to investigate a research question. Specifically, it exposes the false dichotomy between “qualitative” and “quantitative” by showing that the complexity of the human reality, including perhaps, especially, the study of health is enriched by combining the two approaches. The qualitative study provided the means to explore the ways in which social inclusion provided by Men’s Sheds reduced anxiety and stress, concepts that were objectively tested and verified in the quantitative study. The quantitative results added to the evidence
that belonging to the Men’s Sheds can modulate cardiac autonomic tone by enhancing the vagal activity and reducing the sympathetic activity, which complemented the qualitative findings.

This thesis also contributes to the potential value of mixed methods designs for social justice research in men’s health. The overall findings present above highlights the potential benefit of incorporating qualitative methods designs to researching health inequalities generally, and social justice-oriented research specifically. The basic philosophy of science elements of axiology (values and ethics), ontology (nature of reality) and epistemology (researcher-participant relationship) presented in the qualitative component of this mixed methods study has a social justice agenda. If I depended solely on a quantitative research approach, for instance concerning its random sampling, the voices of some of the socially disadvantaged and marginalised men involved in Men’s Sheds would not have been heard. In other words, a sole reliance on quantitative methods with the men facing inequalities in health would have violated the social justice principles of equity, access, participation, and harmony in this study.

It is for the above reason that Mohatt and Thomas (2006) caution how easily well-intentioned researchers can violate social justice principles when crossing socioeconomic and cultural boundaries. By contrast, the hermeneutic philosophy anchored qualitative design in this study gave voice to previously silenced groups of men involved in Men’s Sheds “who share their worldview and lived experiences in their own words, in their own way, and under conditions set forth through co-membership in the research endeavor (Ponterotto, Matthew & Raughley, 2013, p.49). Having the men involved in Men’s Sheds as co-researchers in this study is a hallmark of social justice oriented empirical inquiry. It is, for this reason, Mertens (2015) encourages researchers to do research that integrate mixed methods to address inequities and build on the resilience found in underrepresented communities. Such research, conducted by researchers who focus on strengths rather than weaknesses, can markedly promote social justice principles advocated by men’s health practitioners.
This thesis provides a depth and breadth of coverage and biopsychosocial understanding of Men’s Sheds that likely could not have been accomplished through single method designs. The quantitative part of the study provided explanatory and generalizability benefits, while the qualitative part of the study provided a depth of understanding and more vivid description of a phenomena. To my knowledge, no systematic empirical research exists addressing the question of how Men’s Sheds impacts on biological (vagal tone and haemodynamic measures), psychological (which entails thoughts, emotions, and behaviours), and social (socio-economical, socio-environmental, and cultural) factors. Through adopting a mixed methods approach, this thesis builds on a larger body of theoretical and empirical work positing that health is best understood in terms of a combination of biological, psychological, and social factors rather than purely in biological terms. More so, the mixed methods results revealed that diseases are not only biological hazards but also biopsychosocial processes. Apart from the contributions to the development of mixed methods research, this thesis contributes to other literature, especially the social determinants of health literature and the strength-based approach to working with men.

This thesis contributes to the social determinants of health literature and improves our understanding of the role of social inclusion on men’s health in several ways. Firstly, it presents empirical evidence on the role of social inclusion not just in preventing illness but also in fostering men’s wellbeing to which the extant literature has paid little attention. Secondly, the relationship of mutual influence between social determinants of health such as stress and social support to the health and wellbeing of the men involved is clear and unquestionable. In other words, this thesis has established the beneficial effects of Men’s Sheds as a psychological intervention over the physiological operation. Because of this, a “social determinants of health” approach to men’s health presents a favourable perspective that would assist in the evidence-based development of men’s health policies and practice.

Besides, this thesis makes a contribution to men’s health literature by supporting the utility of a strengths-based approach to men and their health. As has been discussed
in Chapter 2, until recently, the literature on men’s health and men’s focused policies and programs have often focused primarily on what is wrong with men, which has been labelled a deficit model (Macdonald, 2013). Specifically, up until 2010 the literature tended to problematise and individualise men’s health through having a narrow focus on male pathologies, whether clinical or social. However, the Australian National Male Health Policy, which was published in 2010 challenges both the existing cultural take on men, both in society at large and calls for the adoption of a strengths-based approaches to men and their health. Therefore, there is a requirement for more research on policies and programs, which build on the strengths of men in order to move away from the deficit discourse driven by the narrow focus on pathology. This thesis, therefore, contributes to the literature on strengths-based approaches for men at risk of social isolation by specifically naming Men’s Sheds as a strengths-based approach to men’s health (salutogenic) and systematically documenting the effectiveness of this approach in fostering and protecting men’s health.

10.2.2 Recommendations for Further Research

The limited understandings available on the impact of social inclusion provided by Men’s Sheds on the health and wellbeing of the men involved directed me to undertake this study. What I offer here is but one of the many, many more understandings that we require to better understand the health impacts of Men’s Sheds generally and the social inclusion provided specifically. Men’s Sheds are extremely diverse in their structure, function and so is their membership. The majority of the shed participants are older, retired or unemployed, men with limited education, lower levels of health literacy and from disadvantaged socio-economic and cultural backgrounds (Misan & Sergeant, 2009). It would be interesting if future work could be devoted to research guided by emancipatory or transformation paradigms (Mertens, 2008), which employ participatory action research in the evaluation of Men’s Sheds. It is hoped transformative paradigm will provide a useful theoretical umbrella to guide methodological choices that address inequality and
injustice while allowing testing and measurement of important clinical and psychosocial variables in men involved in Men’s Sheds.

As there are very few indigenous Men’s Sheds in the country, yet this is a population that is known to experience higher rates of health disparities, future studies must explore Shed access issues for this group. It is important that such studies apply protocols that ensure research with and about Aboriginal and Torres Strait Islander men follow a process of meaningful engagement and reciprocity between the researcher and the individuals and or communities involved in the research. I recommend future studies in this area to be in line with the Guidelines for Ethical Research in Australian Indigenous Studies (GERAIS). More so, future studies would benefit from a methodology that employs a much longer intervention period and sufficient power to ensure not only detection of biopsychosocial changes but strong correlations amongst the variables. This will also help improve the generalizability of the study.

The third recommendation is that quantitative questionnaires could include instruments that measure social support, but also those that can measure SOC in order to align these concepts empirically with the participants’ comments on Men’s Sheds. Use of the ‘Multidimensional Scale of Perceived Social Support’ (MSPSS) could be used as it has three subscales, each addressing a different source of support (Hostinar et al., 2014). It would be possible to identify whether increases in parasympathetic activity and decreases in the sympathetic activity of ANS is due to participating in Men’s Sheds or other confounders. Research with either MPSS data points or SOC measures could either lend support to my conclusions or generate other plausible theories. Also, MPSS and SOC could be used with in-depth interviews as a form of stimulated recall in an explanatory mixed methods design.

Forth, an intersectoral collaboration between Men’s Sheds and formal healthcare institutions and other external agencies is proposed in order to research and promulgate the shed movement as a legitimate PHC strategy for men’s health. Prior to the execution of this intersectoral collaboration, the effectiveness and
practicability of cooperative work between these actors will be studied working with AMSA and men’s health practitioners in order to ensure Men’s Sheds are not medicalised or become proxy clinics. Furthermore, future studies must explore other factors beyond social inclusion, to understand what factors motivates or prevents men in participating in Men’s Sheds. It is important to note that participants in this study enjoyed participating in Men’s Sheds and did not provide negative comments about their experiences. There is need for future research to explore the experiences of men who tried a shed and left it or those who reject the idea of going to a shed in order to understand these factors.

Finally, as I reach the end of my project, I am also aware that this study has shown me that there is a need for adopting a social determinants of health in women’ health as well. I suggest it would be of value for future research to investigate the impact of psychosocial interventions aimed at providing social inclusion for women at risk of social exclusion. This would complement my thesis and the research conducted by Slaman et al. (2014) into the importance of social support interventions on reduction of levels of anxiety and depression and improving health-related quality of life. In my time researching the impact of Men’s Sheds on the health of the men involved I interacted extensively with these men’s wives, daughters, sisters and mothers. In contrast to some of the literature investigating social networks, which states that men have fewer friends and a smaller network than women, my experience talking to some of these women revealed that Men’s Sheds makes this gender ratio at odds with this information. I learnt that that some women, together with their husbands are now involved in Men’s Sheds for social support.

10.2.3 Implications for Research, Practice and Policy

I began this study by identifying tensions within the current literature on men’s health. Australian men suffer a health differential that is skewed toward higher mortality and morbidity rates for some preventable diseases. Men’s health practitioners including service providers are called to consider the usefulness of the
social determinants of health/salutogenic approach to men’s health practice. The findings seen in their complementarity should challenge us to expand our view of the men for whom we offer interventions and services. This study demonstrates that before advancing the deficit stereotypes about men, we must take stock of our values and strive to create environments supportive of their health. This perspective encourages us to focus on policies, systems, and interventions or services that encourage a salutogenic orientation in men rather than focusing on destroying the culture of destroying hegemonic masculinity. Therefore, there is a general need to move towards male-friendly interventions and health service environments, such as the provision of interventions which depict positive images of men (Banks 2004; Tremblay & L’Heureux 2005; Smith 2007)

Based on this study, I recommend that we view social support as an important determinant of men’s health, just as it is to women’s health. As Macdonald has argued, “men and boys may have different ways from women of expressing their social nature and their need for contact with others, but connectedness and support are as important for them as for women (2005, p.107). Rather than simply blaming men for not accessing health services or not looking after their health, service providers and policy makers must lead the action in providing a suite of activities that create or enhance social connections between men, especially after retirement or retrenchment.

The present study offers a strong case that maintaining social connections can be challenging for men after retirement or especially retrenchment. The loss of work friends detrimentally affects physical health, increase stress, and contribute to depression, feelings of self-pity, and reduced self-confidence. Thus, the development of resources, staff education, and policies to support further implementation of programs that support social connections in men’s health practice is essential. In addition, by optimising existing resources that provides opportunities for regular hands-on activities for men who experience work-related losses in retirement greater risk of the detriments described above can be minimised.
The findings of this study supported the fact that offering supportive environments to men at risk of social isolation is best practice. Macdonald (2006) recommended that we enhance the focus of our current health systems by increasing a focus on environments that facilitate the growth and maintenance of health through engagement with the environment. Therefore, in men’s health, strategies for building health should turn to the incorporation of the elements or pillars of PHC in order to focus on supportive environments based on the primary needs of the population in question. Men’s Sheds and other grassroots hobbyist or enthusiast organisations such as other woodworking associations and antique machinery restoration clubs promote wellness and should be incorporated into all men’s health services.

The creation of a supportive environment is a foundational clinical skill. Even basic medicine teaches that the provision of a supportive environment reduces stress and anxiety, increases patient satisfaction, and promotes health and healing (Gouin & Kiecolt-Glaser, 2011). The current study’s findings on the theme of feeling valued and the analysis of LLM, which revealed better health outcomes as a result of participating in Men’s Sheds provide impetus to ensure that the skills and time necessary to develop a strong evidence base for what constitute supportive environments for men continue to receive priority in clinical practice as well. In a healthcare system increasingly designed to meet the needs of everyone, the low usage of services by men and the high usage by women may inadvertently cause health services to become sensitised to women and children needs (Baker et al., 2014; Kabagenyi et al., 2014; Macdonald, 2005). Rather treatment environments and the staff who work in them need to have the resources and skills to support the development of a supportive environment during personal interaction with men built on the premise of male-friendly environments.

The discussion on the theme of being valued by a network of supportive friends makes one think, naturally enough, about my own father and how social isolation affected his health. This thesis, a reflection on others’ social networks, is now paradoxically part of my own understanding about the negative impact that isolation
had on my fathers’ health and wellbeing. It is my sincere wish that this thesis and my interpretations of the men’s experiences of being valued by their social network and the quantification of how participation in the Men’s Shed impacted on physiological measures of stress and psychological outcomes, provides health practitioners, policy makers and clinicians with understanding of developing male-friendly environments.

10.3 Summary and Conclusions

This mixed methods study explored the impact of Men’s Sheds on the health of the men involved. The qualitative study explored the meaning of social inclusion provided by Men’s Sheds and was underpinned by the philosophical hermeneutics of Gadamer (2004), and the ideas of van Manen (2001). A quantitative study explored the impact of Men’s Sheds on resting HRV, cortisol levels and other important health outcomes and was designed as a one-group pretest-posttest study. Results from this mixed methods study demonstrated that each of the findings was closely interrelated, often overlapping and influencing the other. The findings as they are described in the current study have been explored within the biopsychosocial model of health and framework within the salutogenic theory, and PNI and to a lesser extent the theory of cooperation, equilibrium theory and hopelessness depression theory.

The question of whether Men’s Sheds, a workshop-type space in community settings, which offer regular and systematic hands-on activities for men can protect health and improve wellbeing has been partially answered. Following this mixed methods study, there is enough data to argue for this relationship and many questions have been opened which will need to be answered by further research. These results suggest Men’s Sheds as a useful strategy for improving psychological and other important health-related outcome measures and as a source of data indicating specific variables to consider in the development of psychological interventions addressed to modulate cardiac autonomic function by enhancing vagal activity and decreasing sympathetic activity of ANS. Another outcome is the protective effects of
In summary, Men’s Sheds seems to promote the health and wellbeing of the men involved, possibly by effects through other psychosocial factors, such as fostering social connections, building self-esteem and through effects on multiple neurobiological factors. It will be important for men’s health researchers to conceptualize, test, and apply effective interventions specifically aimed at increasing social support for at-risk men, such as the retired or unemployed. This represents an important challenge for our field, which concerns itself with the scientific reductionist pathological diagnosis of disease instead of preoccupation with the origins of wellness or health. A concern with salutogenesis goes beyond an understanding of what makes men sick to a preoccupation with environments that facilitate the growth and maintenance of health. My own horizon on salutogenesis was deeply enriched while undertaking this project. It is my sincere wish that this thesis and my interpretations of the men’s lives and evaluation of their cardiac autonomic function shine light on the salutogenic environments described herein.
10.4 References


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Appendix A: Participant Information Sheet

Human Research Ethics Committee
Office of Research Services

University of Western Sydney

Participant Information Sheet (General)

An information sheet, which is tailored in format and language appropriate for the category of participant - adult, child, young adult, should be developed.

Notes: If not all of the text in the row is visible please ‘click your cursor’ anywhere on the page to expand the row. To view guidance on what is required in each section 'hover your cursor' over the bold text. Further instructions are on the last page of this form.

Project Title: “Impact of Men’s shed Movement on Health: An Investigation with Emphasis on Social Inclusion, Cortisol Level and Resting Heart Rate Variability”

Who is carrying out the study?
Luckman Hlaimbelo (Ph.D. Candidate), supervised by Prof. John Macdonald, Dr. Bobby Cheema and Dr Andrew Fleming

You are invited to participate in this study being conducted by Luckman Hlaimbelo (Ph.D. Candidate), supervised by Prof. John Macdonald, Dr. Bobby Cheema and Dr Andrew Fleming from University of Western Sydney. Luckman can be contacted at 16269965@student.uws.edu.au; phone 0408934032

What is the study about?
Social isolation has been associated with a variety of negative health outcomes. Indeed, social isolation has been associated with increased suicide mortality, as well as increases in the severity of chronic health conditions such as high blood pressure and heart disease. Scientific evidence show that cardiovascular disease is not just the major cause of death in Australia; it is also responsible, more than any other group, for the excess of death among men. In recent years, more and more Australian men have joined and are involved in the Men’s Shed movement for social inclusion. However, very little research has focused on understanding the experiences of men involved in the Men’s Shed Movement and how their participation contributes to improved health outcomes.

The specific goals of this study are (1) to examine the impact of Men’s shed on the health of the men involved; and (2) to determine whether participants involved in the Men’s Shed can improve measures of stress, cardiovascular health and well-being. Salivary cortisol is frequently used as a biomarker of psychological stress and related mental or physical diseases. Correlative research indicates that social support is associated with a decreased basal cortisol secretion. Hypothetically, it should be expected that participants involved in the Men’s Shed Movement will show a decrease in the basal levels of cortisol at 6 months follow up. Heart rate variability (HRV), assessed via 5-minute recording of heart rhythm provides an index of parasympathetic and sympathetic control of heart function (level of physiological stress). It is hypothesized that the participating in the Men’s shed movement will increase HRV, which is an indicator of reduced physiological stress. Additional measures to be assessed include quality of life and anxiety, so this is quite an important area of study.

What does the study involve?
If you volunteer to participate in the study, you will be contacted by the researcher to set up a convenient day and time for pre-screening interview to determine eligibility and obtain informed consent (1 hour). During the visit you will be asked questions about your medical history, and will be required to complete a questionnaire asking about your demographic details, attendance in
the Men's Shed and general well-being.

The study will involve you:

1) Participating in an interview with the researcher about your experiences with the Men's shed. The interview will not be a list of questions to answer. It will be more like a conversation about your experiences in the Men's shed and will be recorded on an audio tape, which will later be transcribed and analysed. Because this sort of interview takes time, up to 3 visits of about 1 hour each might be needed. This means that if you get tired, or the researcher needs to clarify the things talked about, a new time can be made for another visit. The total interview time will be about 3 hours.

2) Completing two questionnaires. The first on how you view your quality of life and the second on how anxious you are. They will take around 30 minutes to complete.

3) Collection of saliva samples to measure the levels of a hormone called cortisol. In order to do this we will provide you with cotton swabs onto which you will collect the saliva on two occasions, first at baseline and at 6 months follow up. Participants will be asked to avoid eating, drinking caffeinated beverages and smoking two hours before the test. The experimental session is aimed to last for 15 mins and conducted between 2:00 and 6:00 p.m.

4) Measurement of resting heart rate variability, blood pressure and heart rate. For the measure of heart rate variability you will be asked to wear a small ECG monitor and three small adhesive electrodes on your chest and abdomen whilst performing some light activities (such as moving from lying to sitting). This test will also be done at baseline and at 6 months follow up and participants will also be advised to avoid caffeinated beverages the day of their assessment and vigorous exercise for at least 48 hours prior to their assessment. The test will take up to 1 hour.

How much time will the study take?  
The study will take approximately 26 weeks to complete.

Will the study benefit me?  
Participants in this study are perfectly healthy volunteers. This study is not designed to be used for screening or diagnosis. Some subjects find participation in cortisol and heart studies and the opportunity to know their own results afterwards an interesting experience. However, if you are consistent in your involvement in the Men's Shed movement, it is expected that your health status will improve. Specifically, your endurance to stress and your quality of life may all increase, while feelings of anxiety and social exclusion may decrease. Other benefits might also be achieved, including improved sense of belonging, increased sense of self-worth and feeling of security amongst others.

Will the study involve any discomfort for me?  
There are no expected risks from participating in the study. If discussing personal experience is upsetting to you, you may choose not to answer those or any other questions. If you feel, you need counselling I may give you the telephone numbers of appropriate counselling service providers. The testing procedures and completion of questionnaires should not induce any level of discomfort.

How is this study being paid for?  
The study is being sponsored by the University of Western Sydney through the Higher Degree Research (HDR) Candidate Project Funds (CPF).
Will anyone else know the results? How will the results be disseminated?
We will not use your name to identify the interviews and test results. Instead, we will use a numeric code to identify participants in our study. We will store all test results in a locked area and on password protected computers. We hope to publish the results of our study in a scientific journal and will display any results with no references to the identity of individuals. The records dealing with your participation will be kept under safe storage for 5 years after completion, and these records may only be inspected for purposes of data audit by authorised persons within the institution (e.g., Ethics Committee).

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and - if you do participate - you can withdraw at any time without giving any reason and without any consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by providing them with the chief investigator's contact details. They can contact the chief investigator to discuss their participation in the research project and obtain an information sheet.

What if I require further information?
When you have read this information, Mr. Luckman Hliambelo or his supervisors will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact Luckman via email or telephone; 15269965@student.uws.edu.au, mobile 0408934032.

What if I have a complaint?
This study has been approved by the University of Western Sydney Human Research Ethics Committee.
The Approval number is [enter approval number]

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel 02-4736 0883 Fax 02-4736 0013 or email humanethics@uws.edu.au.

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

If you agree to participate in this study, you may be asked to sign the Participant Consent Form.
Appendix B: Participant Consent Form

Human Research Ethics Committee
Office of Research Services

University of Western Sydney

Participant Consent Form

This is a project specific consent form. It restricts the use of the data collected to the named project by the named investigators.

Note: if not all of the text in the row is visible please ‘click your cursor’ anywhere on the page to expand the row. To view guidance on what is required in each section ‘hover your cursor’ over the bold text.

Project Title: “Impact of Men’s shed Movement on Health: An Investigation with Emphasis on Social Inclusion, Cortisol Level and Resting Heart Rate Variability”

I consent to participate in the research project titled: Impact of Men’s shed Movement on Health: An Investigation with Emphasis on Social Inclusion, Cortisol Level and Resting Heart Rate Variability.

I acknowledge that:

I have read the participant information sheet and have been given the opportunity to discuss the information and my involvement in the project with the researcher.

The purpose and nature of the study has been explained to me and any questions I have about the project have been answered to my satisfaction.

I consent to be interviewed for the purposes of this study and; (Please tick the one that apply)

☐ I consent to the testing sessions (salivary cortisol, heart rate variability and questionnaires).
☐ I do not consent to the testing sessions (salivary cortisol, heart rate variability and questionnaires).

I understand that my involvement is confidential and that the information gained during the study may be published but no information about me will be used in any way that reveals my identity.

I understand that I can withdraw from the study at any time, without affecting my relationship with the researcher/s now or in the future.

Signed:

Name:

Date:

Men’s Health Information and Resource Centre
University of Western Sydney
Locked Bag 1797
Penrith South DC 1797
Fax (61) 2 45701522

Return Address:
Appendix C: Ethics Approval

UWS HUMAN RESEARCH ETHICS COMMITTEE

27 August 2012

Professor John Macdonald,
School of Science and Health

Dear John,

I wish to formally advise you that the Human Research Ethics Committee has approved your research proposal H9752 “Impact of Men’s Shed Movement on Health: An Investigation with Emphasis on Social Inclusion, Cortisol Level and Resting Heart Rate Variability”, until 1 July 2015 with the provision of a progress report annually and a final report on completion.

Please quote the project number and title as indicated above on all correspondence related to this project.

This protocol covers the following researchers:
John Macdonald, Birinder Cheema, Andrew Fleming, Luckman Hlambelo.

Yours sincerely

Dr Anne Abraham
Chair, UWS Human Research Ethics Committee

j.macdonald@uws.edu.au
16269965@student.uws.edu.au
Appendix D: Contact Information and Study Eligibility

Questionnaire

To be completed by researcher:
Participant No.: ___________
Date: _____________________

Contact Information and Study Eligibility

Mobile Phone: ________________ Men’s Shed Office Phone: ________________
Home Phone: ________________ Email: ___________________________________

Preferred Method of Contact: Email ☐ Mobile ☐ Shed Phone ☐ Home Phone ☐

Date of birth (dd/mm/yyyy): ____________________

How long ago did you join the Men’s Shed ☐ 1-2 weeks ☐ 2-4 weeks ☐ 4-8 weeks
☐ 8-10 weeks ☐ 10-12 weeks ☐ >13 weeks

Are you currently coming to the Shed more than two times per week? Yes ☐ No ☐

Which days of the week are you in the Shed? ___________________________________

Current Occupation or Employment status: _________________________________

Are you able to attend the Shed program on Thursdays and Friday from May 01 to November 30 2012?

Yes ☐ No ☐

If not, which are your preferred days? _______________________________________

The following questions are required for screening individuals prior to commencement of the experiment. Answers to the following questions are required in order for us to have useful saliva samples and reproductive heart rate and hear rate variability measurements. PLEASE ANSWER ALL QUESTIONS...
HONESTLY. If you have any concerns about answering any question please see the research staff in private.

Medical History

1. Are you currently under a physician’s care for any illness? Yes □ No □
2. If yes, what is it? ______________________________
3. Has your doctor ever told you that you have an endocrine disorder or cancer? Yes □ No □
4. Has your doctor ever told you that you have a heart murmur? Yes □ No □
5. Has your doctor ever told you that you high blood pressure? Yes □ No □
6. Do you know your systolic blood pressure? Yes □ No □
7. If yes, what is it? __________ mmHg
8. Do you know your diastolic blood pressure? Yes □ No □
9. If yes, what is it? __________ mmHg
10. Are you currently taking any over-the-counter or prescribed medications, or any vitamin supplements, or any other pills that may contain steroid hormones? Yes □ No □
11. If yes, please list all medications you are taking along with condition for which they are taken:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

12. How has your health been in the past few days? Have you had a fever of OVER 39 degrees Celsius in the last few days? Yes □ No □
13. Do you smoke cigarettes daily? Yes □ No □
14. If yes, how many cigarettes do you smoke each day on average? 

15. If no, have you quit smoking within the last two years? Yes ☐ No ☐

16. Are you currently involved in a regular exercise program? Yes ☐ No ☐

If yes, please describe: ________________________________________________
Appendix E: Recruitment Letter to Men’s Sheds Organisations

Appendix 5 Recruitment letter to Men’s Shed Organisations

Locked Bag 1797
Penrith South DC NBW 1797 Australia
Research Services

The Coordinator……………..Men’s Shed

Dear, ……………………………

As you may know, University of Western Sydney is an academic centre dedicated to excellence in both population health and research innovation. I am currently undertaking as part of my higher research degree a study aimed at investigating the impact of Men’s shed on the health and well-being of the men involved. I hereby request your help with the recruitment of men (shedders) who are new to the Men’s Shed. Specifically, I would like to enroll men who have been in the Men’s Shed for less than 3 months. Potential participants will be interviewed and also engage in testing of cortisol level, heart rate variability and psychological parameters (i.e. quality of life, trait and state anxiety) before and after 6 months.

A flyer with information for potential participants is included with this letter. Please let the men involved in the Men’s shed movement know about this research, by tabling it at a meeting, placing on a notice board, putting it in a newsletter or reading out to members. Interested men should be free to telephone or e-mail me for more information and to organise an interview.

Participation in this study is voluntary and if one decides not to take part or decide to withdraw at any time, they can do so at any time and there will be no negative consequences for your organisation or men who choose not to participate. The information gained from the study is anonymous and will not be fed back to anyone in the organisation, or released in a way that identifies individuals or your organisation.

This study is supervised by Professor John Macdonald, Dr. Bobby Cheema and Dr. Andrew Fleming and has been approved by the University of Western Sydney Human Research Ethics Committee. The Approval number is ...........If you or the men have any concerns or reservations about the ethical conduct of this research, please contact the Ethics Committee through the Office of Research Services on Tel 02-4736 0883 Fax 02-4736 0013 or email humanethics@uws.edu.au.

If you have questions or need more information about this study, please feel free to contact me on 0408934032 or my supervisor Prof. John Macdonald during weekdays on (02) 4570 1123.

Sincerely yours,

Luckman Hlambele
Appendix F: Recruitment Flier

MEN’S SHED HEALTH RESEARCH PROJECT

Research Participants Needed

Dear Men’s Shed Participant,

I would like to extend an invitation to all new shedders to participate in a research project I am conducting titled: “Impact of Men’s shed Movement on Health: An Investigation with Emphasis on Social Inclusion, Cortisol Level and Resting Heart Rate Variability”

The purpose of this research is to determine if participating in the Men’s Shed program can improve measures of stress, cardiovascular health and well-being. If you decide to participate in this study, we would like to understand your experiences and also carry out simple tests to measure the activity of your heart and record your blood pressure and heart rate. These tests will be repeated after 6 months.

If you are interested in participating or finding out more about this research project please contact me via telephone or simple let your Shed Coordinator know you are interested.

Thank you for considering this invitation.

Luckman Hlambelo (Ph.D. Candidate)
University of Western Sydney
Locked Bag 1797
Penrith South DC 1797
Tel (61) 2 45701123
Fax (61) 2 45701522
E-mail 16269965@student.uws.edu.au
### List of free counselling services in Sydney.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auburn Community Health Centre</td>
<td>(02) 9646 2233</td>
</tr>
<tr>
<td>Blacktown Community Health Centre</td>
<td>(02) 9881 8700</td>
</tr>
<tr>
<td>Carinya Aged Ethnic Day Care Centre</td>
<td>(02) 9638 0621</td>
</tr>
<tr>
<td>Crisis Counselling</td>
<td>(02) 9677 1962</td>
</tr>
<tr>
<td>Doonside Community Health Centre</td>
<td>(02) 9881 8650</td>
</tr>
<tr>
<td>Hills Community Health Centre</td>
<td>(02) 8853-4500</td>
</tr>
<tr>
<td>Katoomba Community Health Centre</td>
<td>(02) 4782 2133</td>
</tr>
<tr>
<td>Merrylands Community Health Centre</td>
<td>(02) 9682 3133</td>
</tr>
<tr>
<td>Mt Druitt Community Health Centre</td>
<td>(02) 9881 1200</td>
</tr>
<tr>
<td>Parramatta Community Health Centre</td>
<td>(02) 9843 3222</td>
</tr>
<tr>
<td>Rockdale Community Health Centres</td>
<td>(02) 9087 8300</td>
</tr>
<tr>
<td>Ryde Community Mental Health Centre</td>
<td>(02) 9858 7777</td>
</tr>
<tr>
<td>Springwood Community Health Centre</td>
<td>(02) 4751 0100</td>
</tr>
</tbody>
</table>

Appendix H: Interview Guide

INTerview GUIDE

The questions are based on a review of the literature and the identified gaps and aimed at investigating the following themes:

- the men’s experience and meaning(s) of Men’s Sheds
- their experience of social inclusion provided by Men’s Shed, and the meaning they hold
- the relationships of the above to each other

Leading question:

- Okay well thanks for coming; perhaps start by telling me why the Men’s Shed is important to you?

Potential probes and prompts based on themes

Theme: Experience and meaning of Men’s Sheds

- What brought you to the Men’s shed?
- What is it like?
- How long have you been coming to the Men’s Shed?
- How did you find out about the Men’s Shed?
- What motivated you to seek out the Men’s shed?

Theme: Experience of social inclusion provided by Men’s shed

- How would you describe your overall emotional well-being before coming and participating in activities here in the Men’s shed?
- Tell me about any periods of sadness you experienced before coming to the Shed. How were your periods of sadness related, if at all, to the lack of social support from friends?
- Tell me about any periods of loneliness you experienced before coming to the Shed. How were your periods of loneliness related, if at all, to the lack of social support from friends?
- How would you describe your life satisfaction before coming to the Shed? How was your life satisfaction related, if at all, to the lack of social support from friends?

Concluding question

We have talked about a lot of things. Is there anything else you would like to add in relation to your experiences with Men’s Sheds?
Appendix I Linear mixed-effects models

1. SDNN: Time Domain HRV Analysis

A mixed-effects model was fit. The dependent variable was SDNN. The independent variable was intervention. There are three covariates, age, marital status, and frequency of attendance in Men’s Sheds. The fitted model can be written as follows:

\[ SDNN = 24.40 - 2.40*I(\text{Marital status}) - 0.14*\text{Age} + 1.29*\text{Frequency of attendance in Men's Sheds} - 1.18*I(\text{Intervention}) \]

Note that \( I(\text{Marital status}) \) and \( I(\text{Intervention}) \) were indicator variables.
  - \( I(\text{Marital status}) = 1 \) if marital status = “Married”; \( I(\text{Marital status}) = 0 \), otherwise.
  - \( I(\text{Intervention}) = 1 \) if baseline; \( I(\text{intervention}) = 0 \) if after a six months period.

The results of the F tests in the table below suggested that there was no statistically significant relationship between SDNN and marital status at the 0.05 level (\( p = 0.420 \)). There was no statistically significant relationship between SDNN and age at the 0.05 level (\( p = 0.370 \)). There was no statistically significant relationship between SDNN and frequency of attendance in Men’s Sheds at the 0.05 level (\( p = 0.514 \)). There was a statistically significant relationship between SDNN and intervention at the 0.05 level (\( p = 0.013 \)). The estimated marginal means of SDNN were 18.67 (SE = 1.52) and 19.85 (SE = 1.46) at baseline and after a six months period, respectively. We conclude that SDNN at baseline was statistically significantly lower than SDNN after a six months period.

<table>
<thead>
<tr>
<th>Source</th>
<th>Numerator DF</th>
<th>Denominator DF</th>
<th>F</th>
<th>p</th>
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<tbody>
<tr>
<td>Marital status</td>
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<td>0.420</td>
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<td>Age</td>
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<td>29.000</td>
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<td>0.370</td>
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</tbody>
</table>

\( F \) = F statistic. \( p \) = p-value. DF = degrees of freedom. * indicates significance at the 0.05 level.

The multivariate normality assumption was checked using the model residuals. The Chi-square QQ plot shown below indicates that the normality assumption was satisfied as most of the points lie on the straight line.
2. LF HF Ratio: Frequency Domain HRV Analysis

Model 1

A mixed-effects model was fit. The dependent variable was LF HF RATIO. The independent variable was intervention. There are three covariates, age, marital status, and frequency of attendance in Men's Sheds. The fitted model can be written as follows:

\[ \text{LF HF RATIO} = 4.31 + 3.23 \times \text{I(Marital status)} - 0.07 \times \text{Age} + 0.80 \times \text{Frequency of attendance in Men's Sheds} - 1.02 \times \text{I(Intervention)} \]

Note that I(Marital status) and I(Intervention) were indicator variables.

- \( I(\text{Marital status}) = 1 \) if marital status = “Married”; \( I(\text{Marital status}) = 0 \), otherwise.
- \( I(\text{Intervention}) = 1 \) if baseline; \( I(\text{intervention}) = 0 \) if after a six months period.

The results of the F tests (Table below) suggested that there was no statistically significant relationship between LF HF RATIO and marital status at the 0.05 level (\( p = 0.290 \)). There was no statistically significant relationship between LF HF RATIO and age at the 0.05 level (\( p = 0.679 \)). There was no statistically significant relationship
between LF HF RATIO and frequency of attendance in Men’s Sheds at the 0.05 level ($p = 0.691$). There was a statistically significant relationship between LF HF RATIO and intervention at the 0.05 level ($p = 0.019$). The estimated marginal means of LF HF RATIO were 4.85 ($SE = 1.49$) and 3.83 ($SE = 1.51$) at baseline and after a six months period, respectively. We conclude that LF HF RATIO at baseline was statistically significantly higher than LF HF RATIO after a six months period.

<table>
<thead>
<tr>
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<th>p</th>
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<tbody>
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<td>Age</td>
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<td>29.000</td>
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<td>0.679</td>
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<tr>
<td>Frequency of attendance in Men’s Sheds</td>
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<td>29.000</td>
<td>0.161</td>
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<tr>
<td>Intervention</td>
<td>1</td>
<td>32.000</td>
<td>6.122</td>
<td>0.019*</td>
</tr>
</tbody>
</table>

$F = F$ statistic. $p = p$-value. DF = degrees of freedom. * indicates significance at the 0.05 level.

The multivariate normality assumption was checked using the model residuals. The Chi-square QQ plot shown in Figure 8.15 indicates that the normality assumption was not satisfied as there might be 5 outliers (at the top right corner of the figure). Thus, we decided to remove the 5 outliers (subject 31, 27, 16, 5 and 18) and then refit the model.

![Chi-square QQ plot for LF-HF Power Ratio Model 1](image)

### Model 2
A mixed-effects model was fit after removing 5 outliers (subjects). The dependent variable was LF HF RATIO. The independent variable was intervention. There are three covariates, age, marital status, and frequency of attendance in Men's Sheds. The fitted model can be written as follows:

\[ \text{LF HF RATIO} = 2.26 + 0.75 \times I(\text{Marital status}) - 0.01 \times \text{Age} + 0.16 \times \text{Frequency of attendance in Men's Sheds} - 0.89 \times I(\text{Intervention}) \]

Note that \( I(\text{Marital status}) \) and \( I(\text{Intervention}) \) were indicator variables.

- \( I(\text{Marital status}) = 1 \) if marital status = “Married”; \( I(\text{Marital status}) = 0 \), otherwise.
- \( I(\text{Intervention}) = 1 \) if baseline; \( I(\text{Intervention}) = 0 \) if after a six months period.

The results of the F tests (Table below) suggested that there was no statistically significant relationship between LF HF RATIO and marital status at the 0.05 level (\( p = 0.601 \)). There was no statistically significant relationship between LF HF RATIO and age at the 0.05 level (\( p = 0.887 \)). There was no statistically significant relationship between LF HF RATIO and frequency of attendance in Men’s Sheds at the 0.05 level (\( p = 0.890 \)). There was a statistically significant relationship between LF HF RATIO and intervention at the 0.05 level (\( p = 0.004 \)). The estimated marginal means of LF HF RATIO were 3.27 (SE = 0.77) and 2.37 (SE = 0.70) at baseline and after a six months period, respectively. We conclude that LF HF RATIO at baseline was statistically significantly higher than LF HF RATIO after a six months period.

<table>
<thead>
<tr>
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<th>Denominator DF</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
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<td>Marital status</td>
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<td>24.000</td>
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<td>0.601</td>
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<tr>
<td>Age</td>
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<td>24.000</td>
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<td>Intervention</td>
<td>1</td>
<td>27</td>
<td>10.148</td>
<td>0.004*</td>
</tr>
</tbody>
</table>

\( F \) = F statistic, \( p \) = p-value, \( DF \) = degrees of freedom. * indicates significance at the 0.05 level.

The multivariate normality assumption was checked using the model residuals. The Chi-square QQ plot shown below indicates that the normality assumption was satisfied as most of the points lie on the straight line.
Chi-square QQ plot for LF-HF power Ratio Model 2