A Mixed Methods Sequential Explanatory Study of Male Farmers' Health Beliefs, Attitudes and Practices in Rural Kerry

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A Mixed Methods Sequential Explanatory Study of Male Farmers’ Health Beliefs, Attitudes and Practices in Rural Kerry

Chrysal O’Brien

MA by Research 2018
A Mixed Methods Sequential Explanatory Study of Male Farmers' Health Beliefs, Attitudes and Practices in Rural Kerry

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BSc (HONS), RGN

A thesis submitted in fulfilment of the requirement for the degree of Master of Arts by Research to the Institute of Technology Tralee

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Submitted to Quality and Qualifications Ireland, (QQI), February 2018.
Declaration of Authorship

I hereby confirm that I have composed this thesis, and it is all my own work. I also declare that this work has not been submitted for any other degree or professional qualification, and to the best of my knowledge it has not breached any law of copyright. In this respect, I now submit this thesis for assessment on the programme leading to the award of Master of Arts by Research.

Signed _______________________________ on __________________________
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<td>Assistant Director of Nursing</td>
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<tr>
<td>BMI</td>
<td>Body Mass Index</td>
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<td>CAP</td>
<td>Common Agricultural Policy</td>
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<tr>
<td>CMHN</td>
<td>Community Mental Health Nurse</td>
</tr>
<tr>
<td>CRGN</td>
<td>Community Registered General Nurse</td>
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<tr>
<td>CSDH</td>
<td>Commission on the Social Determinants of Health</td>
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<tr>
<td>CSO</td>
<td>Central Statistics Office</td>
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<tr>
<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
</tr>
<tr>
<td>DoH</td>
<td>Department of Health</td>
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<tr>
<td>DoHC</td>
<td>Department of Health and Children</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>GP</td>
<td>General Practitioner</td>
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<td>GRSP</td>
<td>Gender Role Strain Paradigm</td>
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<tr>
<td>HI</td>
<td>Healthy Ireland</td>
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<tr>
<td>HI-M</td>
<td>Healthy Ireland-National Men's Health Policy</td>
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<tr>
<td>HSE</td>
<td>Health Service Executive</td>
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<tr>
<td>IFA</td>
<td>Irish Farmers Association</td>
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<td>IHF</td>
<td>Irish Heart Foundation</td>
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<td>IMSA</td>
<td>Irish Men's Shed Association</td>
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<td>PHN</td>
<td>Public Health Nurse</td>
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<td>PIL</td>
<td>Participant Information Leaflet</td>
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<td>RQ</td>
<td>Research Question</td>
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<td>RGN</td>
<td>Registered General Nurse</td>
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<td>SDOH</td>
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<td>SEG</td>
<td>Social Economic Gradient</td>
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<td>SRH</td>
<td>Self-Rated Health</td>
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<tr>
<td>SLÀN</td>
<td>Survey of Lifestyles, Attitudes and Nutrition</td>
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<td>TA</td>
<td>Thematic Analysis</td>
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<td>TLS</td>
<td>Time Location Sampling</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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<td>WTO</td>
<td>World Trade Organisation</td>
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Dedication

In memory of my beloved grandmother, Margaret Casey.

Grandma, you are always in my thoughts and forever in my heart.

In dedication to my sons

Dylan and James.
Acknowledgements

I would like to extend my sincere gratitude to all those who have helped me to bring this study to its conclusion. I am very grateful to all the participants, both farmers and healthcare professionals who really participated in the research.

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‘Although health is something close and familiar to us all — something that we constantly and unthinkably talk about, invest in, assign value to, and presume we understand well enough in a common and everyday way — health is at the same time quite distant and removed from us, something that constitutes a silent background condition for all our actions, that makes itself conspicuous only in its absence and that escapes our grasp whenever we reflect on it and try to understand what it means to be healthy’

(Werkhoven, 2014, p. 9).
Abstract

Aim/Background: Beliefs and attitudes about health directly and indirectly influence concomitant behaviours, practices and health outcomes. In Ireland, male farmers are experiencing a disproportionate burden of ill health in preventable lifestyle diseases, yet there is a lack of behavioural research in relation to male farmers and their health. Therefore, the purpose of this study was to examine the health beliefs, attitudes and practices of male farmers in rural Kerry, and to explore healthcare professionals' insights of male farmers' health beliefs, attitudes and practices.

Methodology: The study adopted a mixed methods design. Phase one of the study involved structured interviews with male farmers (n=147) across three different research sites (livestock marts) in February 2016 in County Kerry. The second phase of this study took place in June 2016, in Kerry, and consisted of semi-structured interviews with eleven healthcare professionals from a variety of disciplines.

Findings: The quantitative phase of the study found that although the majority (61.2%, n=90) of male farmers attended their GP, there was a smaller cohort (37.4%, n=55) of men who either exhibited delayed help seeking practices (23.8%, n=35) or never sought help, even though they believed they should have done so (13.6%, n=20). Participants delayed help seeking behaviours were influenced by the level of perceived seriousness that they attached to health issues. Additionally, the beliefs and attitudes (to ignore the symptoms and to believe it was not serious) directly influenced these farmers (health practices) in not seeking help at an earlier stage. The qualitative findings revealed a strong consensus among healthcare professionals that farmers ‘lacked ownership’ of their health and relied heavily on a ‘female significant other’ in relation to their health.

Conclusion: This study raised important questions that necessitate further investigation in regards to male farmers delayed help seeking practices. The research concluded that further qualitative research is required with male farmers to determine the influence of health beliefs and attitudes on their concomitant behaviours, practices, and, thus, health outcomes, and to explore the concepts of responsibility and ownership of health with farmers themselves.
Chapter 1: Introduction to the study

1.1 Introduction
This study presents an examination of male farmers’ health beliefs, attitudes and practices in rural Kerry, in the Republic of Ireland. Current Irish healthcare policy focuses on a neoliberal approach to healthcare, and encourages individuals to take responsibility for their own health and lifestyle behaviours. However, this approach to service provision is problematic, because it overlooks the influence of individuals’ broader\(^1\) life context on their health and lifestyle\(^2\) practices, and fails to consider the influence individuals’ perceptions have on their health behaviours and practices. For instance, Richardson (2004) in the publication *Getting inside Men’s Health* found that men’s perceptions of the seriousness of a health issue determined whether they took action or not. Therefore, if they perceived the issue was not serious or relevant to them, they ignored it, regardless of knowledge of the issue, or whether or not the issue was considered a concern at a public level. In this context, current Irish healthcare policy illustrates a lack of understanding about men and their health practices when they place sole ownership for health on men that struggle with responsibility for their health (Richardson, 2010). Subsequently, current Irish health services refer to men that under use the health services and lack responsibility for their health as ‘difficult’ and ‘hard to reach’ (Sydor, 2013). This is particularly true of male farmers in Ireland, who, in comparison to the general population, are experiencing a disproportionate burden of ill health in lifestyle diseases and who are referred to in this study as ‘challenging’ and a ‘hard to reach’ group in terms of responsibility for their health, and their use of the health services (Van Doorn, Richardson and Osborne, 2014).

\(^1\) In this study, the term ‘broader life context’, ‘wider issues’ and ‘holistic approach’ were used interchangeably to denote the social, cultural, economic and environmental factors that influence farmers’ lives and health (behaviours).
\(^2\) ‘Lifestyle’ referred to the set of habits and customs that are influenced, modified, encouraged or constrained by the lifelong process of socialisation.
1.2 Why study male farmers’ health beliefs, attitudes and practices?
Traditionally, farm safety dominated male farmers’ health discourse literature, because farmers experienced high levels of accidents and fatalities on their farms (Mc Namara, et al., 2007; Whelan, et al., 2009). However, in recent years, research such as Smyth, et al.’s (2012) study has raised concern about male farmers’ disproportionate burden of ill health in Ireland. They highlighted male farmers had the best health of any occupational group in the 1980s but, twenty years later, when compared to other occupations, they had the worst health in Ireland. Since, Smyth, et al.’s (2012) research, male farmers health has gained increased interest in Ireland, and recently, studies such as Furey, et al. (2016) and Leonard, et al. (2017) have researched the influence of wider issues in farming on male farmers health and wellbeing. Others (Evans, et al., 2009b; Storey, et al., 2014; Van Doorn, Richardson and Osborne, 2014) have found their poor health status was primarily attributed to unhealthy lifestyle practices, and subsequently, were largely preventable diseases.

Since, lifestyle diseases take many years to develop, in theory healthcare policy should be able to tackle preventable diseases. Yet, in practice, there is a complex web of influence on individuals’ behaviours that determines their health practices and health outcomes (Werkhoven, 2014). However, there is a significant lack of behavioural research available in relation to male farmers’ health in Ireland, and this limits our understanding of the antecedents to male farmers’ health behaviours and practices. Therefore, this study sought to examine male farmers’ beliefs and attitudes, and determine their influence on their concomitant health behaviours and practices in rural Kerry.

1.3 Study aim
The main aim of this research was to examine male farmers’ health beliefs and attitudes, and determine the influence of these on their concomitant behaviours and practices.

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3 In this study, the term ‘behavioural research’ denoted research that examined individuals’ perceptions, beliefs and attitudes about their health, and determined the influence of these on their health behaviours, practices and thus, health outcomes.
1.4 Research questions and overview of the study methodology
The study utilised a mixed methods sequential explanatory design to meet the aims of the study. This research design involved two phases; the findings of the first quantitative phase guided the enquiry in the second qualitative phase. The aim of the study was translated into several specific sub-questions, and were answered by quantitative and qualitative approaches respectively or collectively. The central research question investigated in this thesis was: What are male farmers’ health beliefs and attitudes, and do they influence their concomitant behaviours and practices? The specific sub-questions that were utilised to answer the central question are as follows:

1. How do farmers perceive and define their health?
2. What are farmers’ beliefs and attitudes about their health?
3. Do they access health services? If not, why not?
4. Do they delay in accessing health services? If they do delay, why so?
5. What are the key factors that make farmers a ‘hard to reach’ group and what strategies can be used to overcome these factors?
6. Do wider issues influence farmers’ health and/or their health beliefs and attitudes?
7. What are healthcare professionals’ insights of male farmers’ health beliefs, attitudes and practices in rural Kerry?

The first six specific sub-questions were examined in the first quantitative phase of the study, and research question (RQ) 5 was addressed through the research approach employed with 147 male farmers at the livestock marts in three different locations in Kerry. The primary data collection tool was a survey that was specifically developed to gauge farmers’ perceptions of their health. This phase of the study intended to answer the central research question and provide a broad perspective of male farmers’ health beliefs and attitudes, and determine if they influenced their concomitant behaviours and practices.

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4 The term ‘farmer’ was used in this study to indicate men who owned and worked on their own farms, and precluded men that just worked or laboured on farms.

5 A livestock mart was defined in this study as the business of selling livestock (cattle, sheep or pigs) by auction.
The second qualitative phase of the study was utilised to explain broad quantitative findings in more depth, and RQ7 was employed to gain additional insight into male farmers' health beliefs, attitudes, and practices. However, in this phase the research questions were explored with a different group of participants. Eleven healthcare professionals from a diverse range of disciplines were interviewed to gain a different, but equally important perspective of male farmers' health beliefs, attitudes and practices. Male farmers were more likely to exhibit their attitudes and beliefs about their health, and reveal their actual health practices with healthcare professionals, more so, than any other group. Therefore, healthcare professionals were in a unique position to provide insight into male farmers' health behaviours and practices.

1.5 The context of the study
This study took a novel approach to examine an area of male farmers' health that was significantly under researched and that warranted both breadth and depth to ascertain knowledge of the antecedents to their health behaviours. It adopted a holistic perspective to the health of male farmers and acknowledged broader issues such as economic, social, cultural and environmental factors influenced farmers' perceptions of their health, health issues and health practices. In this light, male farmers' health was considered as inseparable from their lives, and it was deemed impossible to isolate their perceptions and beliefs about their health from other aspects of their life (WHO, 2006b; Caddick, et al., 2016).

1.5.1 Broader life context
This study was set against the backdrop of uncertainty and fear among Irish farmers about Irish agriculture post Brexit. This current generation of farmers have experienced a volatile economic climate and a severity of fiscal pressures since entry into the European Economic Community (ECC), subsequently known as the European Union (EU) in 1973. During the last two decades farmers have been exposed to the 'Celtic Tiger' era (2000-2006), a period of rapid economic growth but, according to Smyth, et al. (2012)

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6 Brexit referred to the decision by the United Kingdom in June 2016, to exit the EU. It has already had a negative impact on Irish agriculture, particularly in terms of currency fluctuations and investment uncertainty. Brexit presents the most serious threat to Irish farming and the agri-food sector in the history of the State (IFA, 2017).
they never experienced the economic benefits during this time of prosperity. This claim is supported by Connolly, et al. (2010) who identified a 43% decline in farm incomes during this time (1995-2009). This was then proceeded by an economic recession in 2008 that established an era of austerity and predicated a slow recovery to the Irish economy. Irish farmers have also experienced rapid mechanisation and transformation in agriculture, significant changes to the family farm structure, and a number of cultural, social and environmental factors that have altered the context of farming in Ireland. In this respect, the current generation of farmers have experienced considerable changes to their lives (Shortall, 2014) and health in a short period of time (Smyth, et al., 2012). This study deemed it was important to acknowledge some of the key changes in farmers' broader life context that have coincided with the deterioration of farmers' health in Ireland.

The research took place in County Kerry in the South West of Ireland, and a map is included as Appendix A. According to the Kerry County Council, it is one of the most sparsely populated counties in Ireland (Kerry County Council, 2016). In Kerry, agriculture currently employs over 10% of the population, and there are over 8,406 family farms in the region, and nearly half of all farmers combine farming with off-farm employment (Central Statistics Office (CSO), 2012). However, since 1991 there has been a significant decline in the number of farmers and small farms in Kerry, and an increase in larger farms (50-100 hectares). Farming in Kerry has become an aged occupation. Currently, there is a disproportionate number of older farmers in comparison to younger farmers, and this deficit is reflected in the stark statistic that only 7% of male farmers in the county are under the age of thirty-five (CSO, 2012). This is a concern for farmers in the region and for the sustainability of local agriculture and farm succession, but is reflective of trends on both a national and international level (Furey, et al., 2016; Leonard, et al., 2017).

The Census of Agriculture is a detailed snapshot of agricultural activity in the Republic of Ireland. The first Census of Agriculture was conducted in 1847 and annually thereafter, until 1953. Censuses of Agriculture were then conducted every five years between 1960 and 1980, and every ten years or so after that. The last Census was undertaken in 2000 and the next Census of Agriculture is not expected until 2020. In this study, the term 'succession' referred to the passing on of both the farm and the title 'farmer' from one generation to the next (Cassidy, 2014).
1.5.2 Reconfiguration of the primary care model in Ireland

The economic recession\(^9\) of 2008 and EU fiscal rules curtailed the reconfiguration of primary healthcare in the community setting in Ireland (Department of Health (DoH), 2016). However, in recent years Ireland’s sustainment of economic growth has renewed investment in Irish healthcare policy. In 2016, the Department of Health’s *Statement of Strategy* for 2016-2019, recognised that ‘historically, health services in Ireland have evolved from a system which has been fragmented and overly hospital-centric’ (DoH, 2016, p. 5). In light of this, the government has committed to a shift towards primary care as the new model to deliver a more integrated health service in Ireland. In 2013, the Government published its most recent health policy *Healthy Ireland - a framework for improved health and wellbeing 2013-2025*. It takes a population health approach, to improve the health and wellbeing of people living in Ireland over the coming generation and aims to focus on prevention, early intervention and empowering people to look after their own health (DoH, 2013). It acknowledges the influence of wider issues on health and encourages a move from a neoliberal individualistic approach and an over emphasis on personal responsibility for health, to a more holistic and ‘whole of government’ approach to health, where there is a shared responsibility for health and wellbeing of the population of Ireland (DoH, 2013), and can only be regarded as a positive shift in healthcare in the context of men such as male farmers who struggle with responsibility for their health.

However, in the Department of Health’s *Statement of Strategy* for 2016-2019, the concept of primary care appears vague, abstract and lacks any concrete or tangible intent, and although it commits to an additional 80 primary care centres, there remains to be a lack of empirical evidence to support the efficacy of the 500 already in community settings in Ireland (DoH, 2016). This is supported by Darker (2013, p. 35) as she highlighted:

\(^9\) The Irish government officially declared an economic recession in Ireland in 2008. It was the most severe economic crisis since the 1930s, and funding for the health service in Ireland significantly declined during this period, particularly during the years 2008-2013 (Darker, 2013, p. 29).
'The Government’s reform plans are ambitious and far-reaching. However, the reality is that Ireland has an appalling track record for introducing and implementing effective reform. For example, the Government introduced ‘Primary Care – A new Direction’ in 2001 which should have seen the roll-out of primary care teams across the country. However, over ten years on, there has been little progress'.

The Department of Health’s strategy adopts a one-size-fits-all approach to healthcare and lacks a gender specific and culturally appropriate focus on men’s health. However, this issue is addressed by the recent National Men’s Health Policy’s collaboration with the nationwide Healthy Ireland, HI-M strategy (2017-2021). In this policy, there are targeted interventions specifically outlined for male farmers in Ireland and it aims to continue the Farmers have Hearts programme at local livestock marts in Ireland (Department of Health and Children (DoHC), 2016). However, it is unclear if interventions targeted at male farmers will go beyond the scope of ‘once-off’ events, and equally, lacks clarity in regards to specific interventions that will support behaviour change and address their unhealthy behaviours and practices, to tackle male farmers disproportionate burden of ill health in largely preventable lifestyle diseases such as cardiovascular diseases, strokes, diabetes and cancers (Evans, et al., 2009b; Van Doorn, Richardson and Osborne, 2014).

1.6 Key concepts and themes
Due to the novel approach of this study, and the significant lack of available research on the topic, the study was not in a position to advocate that any one theory or body of work had the ability to sufficiently inform the theoretical underpinnings of the study. In this respect, to understand the potential influence of farmers broader life context on their health beliefs, attitudes and practices, the study drew on multiple discourses from a wide range of disciplines inclusive of men’s health and rural studies, philosophy, psychology, sociology, economics, anthropology, cultural geography and agriculture to

10 The Irish Heart Foundation (IHF), contracted by the Health Service Executive (HSE), commenced a health programme called Farmers have Hearts - Heart Health checks in 2005 in County Roscommon. The programme targeted rural men at the livestock marts because they had a tendency to underutilise health services (Evans, et al., 2009b). Since then, the IHF has provided over 1,000 free heart health checks at marts across Ireland from October 2013 to May 2014 (Van Doorn, Richardson and Osborne, 2014).
inform the study. In addition, the three key concepts of gender, lay conceptualisations of health and responsibility for health and a social determinants approach to health (SDOH) were drawn upon to understand the processes that influence and develop male farmers' health beliefs, attitudes and practices.

1.6.1 The social construction of masculinities
This study adopted a gendered approach to male farmers' health, and although it did not directly examine gender, it drew on gender and particularly hegemonic masculine discourse\(^\text{12}\) to provide a more nuanced understanding of the study's findings. Key seminal works such as Raewyn Connell's (1995) model of hegemonic masculinity and Will Courtenay's (1998-2003) and James Mahalik's (2003-2007) research was adopted to understand the influence of gender and particularly hegemonic masculinity on some male farmers' health beliefs, attitudes and practices. Connell's (1995) work coined the term 'hegemonic masculinity' as the most valorised and culturally dominant form of masculinity in a given setting at any one time, and is predicated on the subordination of women and other less masculine men. While, Courtenay's (1998-2003) and Mahalik's (2003-2007) research found men that held traditional or hegemonic perceptions of their gender were more likely to engage in health damaging behaviours than men with less traditional beliefs. In this sense, they both highlighted the significant influence men's beliefs and attitudes had on their health behaviours and practices. In the context of this study, some male farmers' health beliefs, attitudes and practices were synonymous with hegemonic norms, and this particular form of masculinity was illuminated in their avoidance of behaviours and practices deemed effeminate such as showing concern for health, expressing emotions and seeking help.

1.6.1.1 Early socialisation in childhood
In this study, gender was understood as the masculine or feminine traits that are deemed to be socially appropriate to the sexes. In this respect, the socialisation processes that begin in childhood and determines the codes of behaviour that are

\(^{11}\) Lay was a prevailing term used in the literature to describe a person that was a non-healthcare professional.
\(^{12}\) In this study, hegemonic masculine discourse was defined as the form of masculinity that was culturally dominant in any given setting, at any one time (Connell, 1995).
deemed to be gender appropriate behaviours and practices for males was of interest in this study. Seminal works such as Pierre Bourdieu's (1987) concept of habitus\(^\text{13}\) and Silvasti's (2003) application of Erving Goffman's (1959) dramaturgical theory of cultural scripts\(^\text{14}\) to the farming community were utilised to understand the gendered socialisation process of male farmers. It was considered pertinent to comprehend the implications the title 'farmer' bestowed on male farmers from a young age, and to appreciate the influence it had on their health beliefs, attitudes and practices.

1.6.1.2 Lay conceptualisations and responsibility for health

This study considered lay conceptualisations of health and responsibility for health as important forms of knowledge that need to be explored to understand male farmers' health. In this sense, the study argued male farmers perceptions of their health and responsibility for their health, directly influenced their health beliefs, behaviours and practices, because regardless of actual health status, it was male farmers 'perception of reality, not the reality itself' (Paterson, 2001, p. 23) that determined their concomitant behaviours and practices.

1.6.1.3 Social determinants of health

The study viewed farmers' health from a SDOH perspective and acknowledged the influence of male farmers' broader life context on their health beliefs, behaviours and practices. It argued that male farmers' health beliefs, behaviours and practices were embedded in the wider determinants of health. In this respect, the study utilised Dahlgren and Whitehead's (1991) SDOH framework to illustrate the macro layers of influence on farmers' health over the last twenty years, and how this coincided with a deterioration in male farmers' health status in Ireland.

\(^{13}\) The term habitus refers to the compilation of accumulated experiences that make an individual's reasoning and practices into 'second nature' and is underpinned by an individual's upbringing and how they are shaped during this period of time (Cassidy, 2014). It is discussed with reference to Bourdieu's (1987) concept of habitus\(^\text{13}\) in chapter two.

\(^{14}\) The term 'cultural scripts' refers to a set of habitual actions that reflect the cultural norms, values, and practices of a group. This is discussed in chapter two, with particular reference to Silvasti's (2003) application of Erving Goffman's (1959) dramaturgical theory of cultural scripts to the farming community.
1.6.2 Concept clarification
In this study, the term ‘salutogenic’ was used to imply the utilisation of a health promoting approach to men’s health, rather than a pathology focused one (MacDonald, et al., 2000). The study viewed gendered health practices such as hegemonic masculine behaviours as learned behaviours that typically reflect wider cultural and institutional masculine ideologies, rather than viewing them as inherent or intractable male characteristics (Richardson, 2004). In this respect, the study advocated a ‘salutogenic’ approach to men’s health because it challenges stereotypical portrayals of men and views them from a positive perspective and encourages society to value men’s capabilities and focus on their strengths to improve their health (Smith, et al., 2008; Roy, et al., 2015).

The term ‘hard to reach’ was utilised throughout this study, but within existing literature its meaning is open to interpretation depending on the context in which it is used. In this study ‘hard to reach’ referred to population groups that did not access or engage easily with health services (Boag-Munroe and Evangelou, 2010; Sydor, 2013). More specifically, it referred to men in Ireland who have been regarded as ‘hard to reach’, such as men living in rural (often isolated) settings (Evans, et al., 2009b; Carroll, Kirwan and Lambe, 2014). Many of these men are referred to by the health services as a ‘hard to reach’ group because they live in remote physical and geographical locations which makes them a ‘challenging’ group to reach due to the nature of their work and their distance from accessing services (Van Doorn, Richardson and Osborne, 2014, p. 9). However, others regarded men as a ‘hard to reach’ group because they were reluctant to co-operate (Bonevski, et al., 2014), or because they engaged with the health services (too) late in the onset of an illness (DoH, 2016). In this respect, the study sought to determine what the term ‘hard to reach’ meant in relation to male farmers in County Kerry and to identify if they were as ‘hard to reach’ as they are portrayed to be within existing literature.

1.7 Researcher’s positionality
The researcher’s positionality or perspective was important to consider in the context of the research study. Finlay and Gough (2003) found reflexivity involved the critical
reflection of the ways in which researchers' social background, assumptions, positioning and behaviour impact on the research process. In this light, I acknowledged both my professional and personal perspectives on the research process and maintained a reflective diary, a sample has been included as Appendix B, to heighten self-awareness and self-analysis between the researcher and the researched (Finlay and Gough, 2003), and to reduce personal bias in the research process (Murrow, 2005). The utilisation of a mixed methods approach to answer the research problem was also considered significant to reduce potential bias, and in particular the adoption of a sequential explanatory design encouraged credible findings because the research had the ability to corroborate findings and achieve triangulation of data (Creswell and Plano Clark, 2010).

From a professional perspective, as a nurse, I regularly cared for individuals in the late stages of lifestyle diseases in both acute and long term settings. The nature of lifestyle diseases are insidious and individuals can engage in unhealthy lifestyle practices for many years, before they experience any health issues (DoHC, 2008). Therefore, in many professional experiences, my engagement with individuals was often in response to a health issue, and the care they required tended to focus on the treatment and management of the symptoms and the severity of disease progression, rather than on preventative health measures. In this respect, as a healthcare professional I personally felt disappointed that I had not been in a position to meet these patients in their earlier years, when there was the potential to address the lifestyle practices that led to these often, debilitating diseases. I found myself increasingly concerned with the global burden of ill health in preventable lifestyle diseases, and I gradually became more interested in the underlying beliefs and attitudes that motivated individuals' lifestyle behaviours in their everyday lives. Therefore, the opportunity to examine the health beliefs, attitudes and practices in a group of men that experienced a disproportionate burden of ill health, and to engage in research in an area of male farmers' health that was significantly under explored in Ireland, evoked a sense of purpose as a researcher, and solidified the commitment to a Masters by Research study to advance knowledge in an area where little was known and address a significant gap in the existing literature.
1.8 Thesis structure
The thesis consists of six chapters. Chapter 1 introduces the study, explains the rationale for the research, outlines the aim of the study and presents seven specific research questions. It provides an overview of the methodology design employed to meet the aims and objectives of the research, and it sets out the research context. It considers the researcher's positionality, and concludes with a strong justification for the present study. Chapter 2 presents the literature review. It employs a holistic approach to male farmers' health and presents a comprehensive review of male farmers 'whole health' by amalgamating studies from multiple disciplines. It shows a broader life context needs to be adopted when examining male farmers' health and considers the accumulative influence of wider issues in farming on farmers' health behaviours and practices. It emphasises the importance of individuals' perceptions on their health, and in particular, the influence of gender and masculine hegemonic discourse on men's perceptions of their health and health practices. The review concludes that there are significant gaps in male farmers' health discourse literature in comparison to men's health in general and in particular, it highlights the need for the current study to address the lack of behavioural research in relation to male farmers' health in Ireland.

Chapter 3 describes the methodological approach of the study. It presents the different participant profiles, the specific research settings, the data collection tools, the different procedures of data analysis, the ethical procedures and rigour that were promoted during the research process. In accordance with a mixed methods sequential explanatory design, the chapter describes the two phases of the study separately, but also provides a detailed account of the strategies employed to ensure the study achieved a mixed methods approach. Therefore, the first quantitative phase of the study guides the enquiry in the second qualitative phase of the study, and the analysis procedures integrate both of the study's findings to 'truly' achieve mixed methods and provide triangulation of data (Bryman, 2006). Chapter 4 is presented in two sections and outlines the findings of the research separately and in the same sequence that they were collected. Section I presents the quantitative data gleaned from structured interviews with 147 male farmers at three different livestock marts in Kerry. Section II outlines the qualitative data garnered from 11 healthcare professionals to gain deeper insight into broad quantitative findings, and to provide further understanding of male farmers'
health beliefs, attitudes and practices in Kerry. This section presents two main themes: Challenges to Current Service Provision; and farmers' Lack of Ownership of their Health. The first main theme reveals the challenges from both the healthcare system itself and from farmers themselves, and the second main theme illuminates the broad quantitative concept of farmers not owning their health and provides context to the quantitative findings.

Chapter 5 draws from both the quantitative and qualitative findings and discusses the meaning of the findings when integrated and with reference to the existing literature presented in chapter 2. It allows the findings from both data sets to be compared and contrasted and promotes a more nuanced analysis of the study's contribution to the existing literature. It also draws on additional literature, where new areas of interest arose through the explorative nature of the qualitative interviews with healthcare professionals. Chapter 6 concludes the thesis and provides a summary of the research, its limitations, and implications for future practice, policy and research. The study provides several contributions to existing literature and enhances our understanding of male farmers' health beliefs, attitudes and practices in rural Kerry. It concludes with a more nuanced understanding of some male farmers lack of ownership for their health, and provides a more positive alternative for the use of the term 'hard to reach' in relation to male farmers in Kerry.
Chapter 2: Literature Review

2.1 Introduction
This literature review aims to present in the context of male farmers’ health beliefs, attitudes and practices, a synthesis of the major themes and arguments relating to the three central concepts of gender, lay conceptualisations of health and SDOH that informed the theoretical underpinnings of the study. The review begins with a succinct overview of the social construction of gender and hegemonic masculinity. It outlines masculine discourse literature to provide insight into the relationship between hegemonic masculinity and men’s health beliefs, behaviours and practices. As the review proceeds it traces the concept of health from a narrow biomedical model to a broader and more holistic perspective of health. It then presents the emergence of lay conceptualisations of health. It pays particular attention to men’s perceptions of responsibility for their health, and the influence it has on their concomitant health beliefs, behaviours and practices. This section of the review closes with an outline of the evidence that supports lay conceptualisations of health as an important form of knowledge that needs to be explored to understand health. Lastly, the review considers the influence of male farmers’ broader life context on their health beliefs, behaviours and practices. It views farmers’ health from a SDOH perspective and acknowledges that their health beliefs, behaviours and practices are embedded in the wider determinants of health. In this respect, it uses the SDOH framework to illustrate the macro layers of influence on farmers’ health over the last twenty years, and how this coincided with a deterioration in male farmers’ health status in Ireland (Smyth, et al., 2012).
2.2 Gender
As this study focused on men's health, gender was a central concept in this study. It was grounded within the theoretical paradigm of social constructionism\(^\text{15}\), and R.W. Connell's (1995) model of hegemonic masculinity framed a gendered analysis of male farmers' health beliefs, attitudes and practices. The contribution of earlier work on Gender Role Socialisation Theory within the social constructionism paradigm was also acknowledged (Pleck, 1995). In this light, the study considered the influence of gender socialisation on men and more specifically, on male farmers' construction of masculinity as both a conscious and unconscious process. The following section provides a succinct overview of both paradigms influence on men's and male farmers' beliefs, behaviours and practices. It highlights the significance of social institutions, and in particular parents influence on boys perceptions of masculine norms\(^\text{16}\) in early childhood. It concludes by surmising the implications of traditional masculine norms on men and male farmers' health beliefs, attitudes and practices.

2.2.1 The social construction of gender
Gender was traditionally associated with biological sex differences. However, in the 1960s and 1970s the influence of second-wave feminism\(^\text{17}\) intensified interest in gender studies and scholars began to challenge the biologically determined view that gender was a natural and fixed state (McQueen, 2016). The social construction of gender became an alternative theory within the field of sociology. From a social constructionist perspective, gender is understood to be the socially constructed cultural practices that differentiate men from women. Connell and Messerschmidt (2005) found gender roles arose from, and served to maintain the power difference between men and women, with men possessing an advantage at the expense of women. It is considered a performative aspect of social identity and social structure, because a particular performance of gender is required to establish identity as a man or a woman in social

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\(^{15}\) The discourse surrounding masculinity considers men's health in relation to the active construction of beliefs, attitudes, and behaviours that impact on their health (Connell, 1995; Courtenay, 2000a).

\(^{16}\) In this study, gender role was understood as the set of expectations associated with the perception of masculinity and femininity, and norms were defined as the expected behaviour in a given situation without stating that one should or must engage in the behaviour. Their function is to guide behaviour through social processes such as compliance and conformity (Levant, 2011).

\(^{17}\) Second-wave feminism referred to the series of political campaigns for reform on a broad range of women's issues in the United States in the 1960s.
interactions (West and Zimmerman, 1987; Schrock and Schwalbe, 2009). In this respect, gender is predicated on the active and conscious performance of masculine and feminine traits and practices that are deemed to be socially appropriate to the sexes (Connell, 1995; Courtenay, 2000a).

2.2.2 Hegemonic masculinities
Connell’s (1995) seminal theory of hegemonic masculinities\(^{18}\) is the most influential and referenced work within the field of masculinities. Hegemonic masculinity is the most valorised and culturally dominant ideology that is attached to manliness at any one time. It is predicated on the subordination of women and other less masculine men (Connell, 1995). It is a stereotypical form of masculinities that can be described as the social processes which create and legitimise male power through a masculine hierarchy (Connell, 1995). Two key concepts that allow hegemonic masculinity exalt power over non-hegemonic forms of masculinity are domination and marginalisation (McQueen, 2016). Connell (1995) explicated traditional views of masculinity are ideological, and only a few men ever occupy such a powerful position. Yet, it appears most men engage in health damaging behaviours to prove they are ‘real’ men, and endorse hegemonic ideals of strength, stoicism, and resistance to health promoting practices deemed as effeminate, to avoid ridicule from their dominant hegemonic peers\(^{19}\). Connell (1995) explained this as the policing of men as well as women, to exert dominance and regulate conformity to standards of masculine norms expected within a specific group.

Connell’s (1995) model of hegemonic masculinity is very applicable to this study. In Ireland, male farmers have constructed a powerful form of hegemonic masculinity that has been upheld for several generations to protect the values and social status of the family (Cassidy, 2014). In this respect, farming has been described as a social institution, because it reproduces hegemonic masculinity through gender roles, breadwinner\(^{20}\) status and normative heterosexuality (Cassidy, 2014). Farming is fundamentally tied to

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\(^{18}\) This study understood masculinities as configurations of social practices enacted by men in alignment with, or in resistance, to a dominant set of masculine ideals (Connell, 1995).

\(^{19}\) Connell, 1995; Courtenay, 2000a; Odimegwu, Pallikkadavath and Adedini; 2013; O’ Beaglaoich, 2014.

\(^{20}\) ‘Breadwinner’ was a colloquial term used in the literature to denote the role as primary provider in the family.
gender, and several studies have described farming men as symbolically representative of hegemonic norms of authority, power and dominance based on their embodiment of stoicism, self-reliance and resilience to adversity (Ni Laoire, 2005; Shortall, 2014; Roy, et al., 2015). Male farmers that endorse traditional masculine ideology value physical strength, and equate 'real' work, to hard physical labour to reinforce a dominant form of masculine identity (Ni Laoire, 2005; Cassidy, 2014). In this sense, male farmers' bodies appear to play a significant role in the social construction of rural hegemonic masculinities, because they use their bodies as a symbol of empowerment, to legitimately display masculine qualities such as toughness, strength and power, through manual labour (Cassidy, 2014). Other studies found a hyper hegemonic form of masculinity existed among male farmers that encouraged them to be stoic, silent, emotionally restrictive and resistant to seeking help (Alston and Kent, 2008).

On the other hand, there are 'multiple masculinities' and many non-hegemonic forms of masculinity that men engage with to negotiate their masculine identities in any given context at any one time (Connell and Messerschmidt, 2005, p. 846). In this respect, masculinities is a fluid and dynamic social process rather than a fixed characteristic type and this is reflected in Connell's (1995, p. 76) definition of hegemonic masculinity as:

'...not a fixed character type, always and everywhere the same. It is, rather, the masculinity that occupies the hegemonic position in a given pattern of gender relations, a position always contestable'.

Men do defy and reject conformity to traditional hegemonic norms of masculinity and adopt health promoting behaviours21 (Connell, 1995). However, this is not the dominant form of masculinity (Courtenay, 2000a), because, at least one or more traditional areas of masculinity hold a powerful sway over the vast majority of men's thoughts, actions and emotions (Mahalik, 1999). In this respect, although all men may not subscribe to hegemonic masculinity, it appears they do measure themselves against it, and are complicit to sustain it as an ideal, in order to preserve the male privilege and gender

21 This study avoided the assumption that 'traditional' or 'hegemonic' automatically implied 'toxic'. Rather it acknowledged that 'traditional' ideals such as 'breadwinner', 'protective roles' and so on, can be beneficial, and are dependent on context (Connell, 1995; Roy, Tremblay and Robertson, 2014).
order. Despite the majority of men being subordinated or marginalised by it (Connell, 1995).

2.2.2.1 Gender role socialisation theory

Gender role socialisation paradigms begin with the assumption that men and women learn gendered attitudes and behaviours from cultural norms and ideologies about what it is to be a man or a woman. John, et al. (2017, p. 6) defined gender socialisation as:

‘...a process whereby individuals develop, refine and learn to ‘do’ gender through internalising gender norms and roles as they interact with key agents of socialisation, such as their family, social networks and other social institutions’.

In early childhood, children learn there are different social roles placed on boys and girls in accordance with their gender. They are taught the cultural norms and appropriate behaviour expected of their gender through the processes of reinforcement and punishment (John, et al., 2017). A fundamental component in the formation of gender identity is the internalisation of gender norms and the individuals' level of conformity to gender appropriate beliefs, behaviours and practices (John, et al., 2017). Social institutions constant enforcement and regulation of expected gender appropriate behaviours are eventually internalised by boys and girls, and become their values, beliefs and behaviours about gender and gender identity (John, et al., 2017). This socialisation process is analogous to Bourdieu's (1977) concept of habitus. Bourdieu defined habitus as a pattern of behaviour that is developed through strict socialisation and explicit sanctioning practices until they become 'second nature' and acts below the level of active consciousness. It is composed of cultural values and rules that develop individuals' tastes, preferences, likes, and dislikes (cited in Garcia, 2013, p. 136). It seems the concept of habitus is not fixed in any deterministic sense but, it is equally not easy to alter, as Bourdieu described habitus always acts within a frame of reference that is entrenched in the past.
Parents play a key role in the gender socialisation process (Chartschlaa, 2004; Odimegwu, Pallikadavath and Adedini, 2013; O' Beaglaoich, 2014). The use of colours, gender specific toys and gender specific clothing are prevailing socialisation processes that parents use to reinforce gender roles. Little girls are encouraged to wear pink and play with dolls, and little boys to like blue and play with trucks (Chartschlaa, 2004). Boys are socialised to be tough, independent and fearless, while girls are taught to be soft, passive and gentle (Odimegwu, Pallikadavath and Adedini's, 2013). Boys are sanctioned and regulated more strictly for non-conformity to traditional gender roles than girls are (Wood, 2002; Odimegwu, Pallikadavath and Adedini, 2013; O' Beaglaoich, 2014). For example, in the United States, Seem and Clark (2006) found, that while feminine norms had become fluid enough to include both feminine and masculine characteristics as acceptable, there was no change in masculine norms in the last fifty years.

In this sense, it appears society has altered its rigid expectations of girls but, remains consistent in its regulation and sanctions of boys' behaviours and practices. The social pressure exerted on boys and men to conform to ideological, unattainable and contradictory expectations of traditional masculine norms is referred to as gender role strain (Pleck, 1995; Levant, 2011). Through the lens of the gender role strain paradigm, masculine gender role socialisation contributes to gender related cognitive distortions for men who are overcommitted to regulating their behaviour according to masculine prescribed behaviour (Mahalik, 1999, p. 334). In this respect, society and in particular parents, covertly or inadvertently increase boys and men's health risks by encouraging stereotypical norms and expectations of gender appropriate behaviour (Courtenay, 2000b; Mahalik, et al., 2003). The association between traditional masculine norms and men's health behaviours and practices is discussed in Section 2.2.3. The section that follows outlines the influence and implications of gender role socialisation in relation to children from the farming community.

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22 The Gender Role Strain Paradigm (GRSP) is a social constructionist perspective developed within the tradition of quantitative empirical psychology (Pleck, 1995; Levant, 2011).
2.2.2.2 Gender role socialisation of children from farming background

Farmers children experience a heavily encultured socialisation process through the gendered division of labour. In a PhD thesis of Irish farming families, Cassidy (2014) used purposive sampling to interview 30 University students in County Galway. The study explored the influence that a farming upbringing had on this cohort of men and women. She found masculine and feminine roles were prescribed within farming families to socialise children into specifically gendered expectations, roles, behaviours and practices. To ensure power and dominance of male work and the farmer role, sons that were perceived as the natural successor were prescribed the role of the ‘farmer’ and allocated the highly valued task of farm work. While, daughters were predominantly allocated the inferior role of ‘helper’. Their main duties were positioned within the domestic sphere and they were encouraged to pursue an education. Although, the ‘helper’ status held less status than the title ‘farmer’ it appears each position had a powerful socialisation process attached to it. Despite, the fact participants had moved away and were in University, they still held an emotional attachment and sense of belonging to the farm that was attributed to their involvement in farm work during their childhood (Cassidy, 2014).

By contrast, the role of the ‘farmer’ bestowed powerful emotional and psychological attachment to the farm. The title ‘farmer’ signified a significant level of duty and obligation to parents to preserve the farm and maintain the cultural values and patriarchal and patrilineal gender order (Ni Laoire, 2005; Coldwell, 2007; Shortall, 2014). In an ethnographic study of seven farm families in the Powys, Mid Wales, Price and Evan’s (2009, p. 6) used Bourdieu’s (1977) concept of habitus to explain how parents used gendered roles and gendered division of farm labour to socialise boys to internalise the title ‘farmer’, build strong attachments to the land and to innately believe they were ‘born and bred to be farmers’. They described the internalisation of the title ‘farmer’, as a key component of the socialisation process because it ensured male farmers became

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23 The role of ‘farmer’ was defined as the worker position. It was routine and involved skill, physical labour and regular commitment. It was traditionally linked to a culturally normative masculine role (Cassidy, 2014).

24 The ‘helper’ role was defined as a sporadic and unskilled position that was useful in an emergency, or for help with the non-essential running of the farm. The ‘helper’ had no ties to the land, and it was traditionally considered a gender appropriate feminine role on the farm (Cassidy, 2014).
...so deeply rooted in the cultural and physical spaces of farming that their gender identity becomes tightly constructed as the farmer to the extent that they cannot imagine a different way of life.

This conclusion was supported by others. In a study of Finnish farmers, Silvasti (2003) applied Goffman’s (1959) dramaturgical theory of a script, to explain the organisation of cultural norms among Finnish farmers. She found gendered division of labour and the continuation of the farm to the next generation were distinctive cultural scripts among farmers in Finland. The study concluded parents used cultural scripts to socialise their children into the ‘farming way of life’. It appears much like Bourdieu’s concept of habitus, once these scripts or messages were internalised, they influenced children’s values, beliefs and behaviours and constructed farming children’s identity.

2.2.2.3 Gender segregation of responsibility

Gendered division of farm labour segregates the tasks and skills that farm children learn. Cassidy (2014) found physical manual labour that took place outside in the farm was the only task perceived as ‘real’ work among farmers. In this respect, boys were given the responsibility of farm work and taught the skills and values required to be a farmer, and their work identity became synonymous with their personal identity (Price and Evans, 2009). Since, farm work was considered the most valuable masculine responsibility, boys not only learned the primacy of farm work over other responsibilities, but it seems they were given very little other responsibility outside of farm work (Cassidy, 2014). It was not considered appropriate for males to be involved in food preparation, childcare or household chores. These domestic duties were perceived as feminine, and the mother segregated these day to day responsibilities to female siblings. This finding resonated with other studies. In two separate studies, Cunningham (2001) and Garcia (2013) found mothers that held stereotypical expectations of gender appropriate

25 The concept of a script was derived from Goffman’s (1959) dramaturgical theory. It concentrates on the idea that there are certain common stories and lines of thought that actors are socialised into performing in their everyday lives according to cultural scripts, which are acted out within a given set of actions (Goffman, 1959 cited in Vanclay and Enticott, 2011, p. 2).
26 Cultural scripts are commonly shared behavioural patterns and cultural models that are used to organise behaviour desired by a group (Silvasti, 2003, p. 144).
27 In this study, ‘the way of life’ was understood as the subjective combination of the individual, the family and the larger social group within the framework of the subject’s life history and living conditions (Silvasti, 2003, p. 144).
behaviour discouraged their sons from doing tasks such as cooking and cleaning. Cunningham (2001) analysed data from a 31 year old panel study of mothers and their children to examine parental predictors of the division of household labour among adult children. He found mothers' gender role attitudes had a direct effect on their sons' participation in household chores in later life. While, in an anthropological exploration of gender appropriate behaviour among 40 young men in County Cork, Garcia (2013, p. 149) found boys were 'spared' from the day to day responsibilities of taking care of themselves or others. Domestic duties and nurturing roles were considered effeminate and inappropriate for boys to learn. Men in the study placed little value on responsibilities deemed feminine and the only responsibility they had learned to value was work. Meanwhile, women in the study felt their mothers did not think boys were capable of too much responsibility because it would 'stress them out'. In this regard, mothers overburdened girls with responsibility and limited boys' responsibilities to work. The study concluded men lacked the basic life skills to take care of themselves.

Gendered segregation of labour and restrictive gender expectations, limited males' responsibilities and skills to gender appropriate tasks of work, and the avoidance of domestic feminine tasks. Both studies showed mothers had a significant influence on their children's beliefs, practices and behaviours. But, Garcia's (2013) study went a step further and explicitly showed the negative implications of stereotypical gender norms on men's (health) beliefs, behaviours and practices. However, it must be acknowledged that Garcia's (2013) study was predominately a male cohort and on inspection it appears only three girls were interviewed to provide a female perspective on gender roles. In this respect, the small female sample size limited the scope of the study and precluded it from generalisation. Yet, the study provided a very interesting perspective. It found that segregating skills and responsibilities based on what was deemed gender appropriate had undermined men's abilities. In this sense, it appears that gender segregation and traditional masculine norms had a significant negative influence on men's health beliefs, behaviours and practices, and is explored in the next section.
2.2.3 Hegemonic masculinity and men's health behaviours and practices
Numerous studies have shown that men who endorse hegemonic or traditional masculine norms, engage in more health damaging behaviours and practices than men who believe in less traditional forms of masculinity. Courtenay (2000a) found men deliberately engaged in health damaging behaviours to actively perform masculinities and reinforce their masculine identity. For instance, men compare unfavourably with women on such health practices as help seeking (Addis and Mahalik, 2003; O’Brien, Hunt and Hart, 2005), eating a nutritional diet (Oliffe, et al., 2015; Caddick, et al., 2016), engaging in preventative health behaviours (Courtenay, 2003), exercising and managing weight (Caddick, et al., 2016), limiting alcohol consumption (Tilki, 2006), avoiding risky behaviours (Courtenay, 2000a; Creighton and Oliffe, 2010), and coping with mental and emotional issues (Alston and Kent, 2008). In this sense, men who endorse hegemonic norms of masculinity act in opposition to health to prove their manliness, because they perceive health as a feminine concept and synonymous with weakness, emasculation and stigmatisation (Buckley and O’ Tuama, 2010; Verdonk, Seesing and Rijk, 2010). In this light, it appears men resist effeminate characteristics at all costs, and to the detriment of their own health (Courtenay, 2000a), and this is discussed further in Section 2.3.4.2 in relation to men’s lay perceptions of responsibility for their health.

Similarly, a large body of quantitative research has proven hegemonic masculinities are largely antithetical to health promoting beliefs, behaviours and practices. For instance, Will Courtenay's work is considered to be seminal and has contributed extensive empirical evidence that men who endorse traditional norms of masculinity engage in fewer healthy behaviours and more risky behaviours. Through his work, Courtenay found that men used health beliefs and behaviours to construct and signify traditional or hegemonic norms of masculinity (Courtenay, 1998b; Courtenay, 2000a; Courtenay, 2000b; Courtenay, McCreary, and Merighi, 2002; Courtenay, 2003). In 1998, Courtenay developed a 60 item Health belief Inventory (HBI), to assess men's health beliefs and behaviours, and it has been widely cited and used in other studies within the field of psychology (Courtenay, 1998a cited in Courtenay, 1998b, p. 286). In 2000, in an attempt to explain a disproportionate burden of ill health among men, he conducted a meta-analysis of over 300 studies in the United States. He found that males of all ages were
more likely than females to engage in over 30 behaviours that increased the risk of
disease, injury, and death. The analysis found males had poorer health behaviours than
women, because the beliefs they held about masculinity were largely unhealthy. The
review concluded men used their health beliefs and behaviours to define their
manliness, and therefore, masculinity directly influenced poorer health behaviours and
outcomes (Courtenay, 2000b).

In addition, a quantitative study of 1,816 undergraduate students in the United States,
Courtenay, McCreary, and Merighi (2002) explored the extent to which college men and
women of various racial and ethnic groups differed in their health beliefs and
behaviours. Exploratory factor analyses of survey responses from a diverse sample
identified 21 items in six cohesive domains: Diet; Stress; Substance Use; Anger;
Preventive Care; Medical Compliance and Beliefs about Masculinity. The internal
consistencies for the factors ranged from .53 (beliefs about masculinity) to .78 (diet).
The study found men engaged in riskier behaviours and held riskier beliefs than women.
Similarly, James Mahalik and colleagues made significant contributions to understanding
the influence of masculine social norms on men’s beliefs, behaviours and practices
(Addis and Mahalik 2003; Mahalik, et al., 2003; Mahalik, Lagan and Morrison, 2006;
Mahalik, Levi-Minzi and Walker, 2007). For example, in 2003, Mahalik and colleagues
conducted 5 studies to develop a psychometric measure to assess the extent that an
individual male conformed or did not conform to a broad variety of dominant masculine
norms in the United States (Mahalik, et al., 2003). Results from factor analysis indicated
11 distinct factors: winning, emotional control, risk-taking, violence, dominance,
playboy, self-reliance, primacy of work, power over women, disdain for homosexuals,
and pursuit of status. The Conformity to Masculine Norms Inventory (CMNI) measure
was found to have strong internal consistency estimates and good differential validity.
They concluded the studies offered initial evidence to support the reliability and validity
of the 11 factor CMNI (see Mahalik, et al., 2003 for the comprehensive overview of the
5 studies and the processes undertaken to develop the CMNI).
The findings of this study were mirrored in a quantitative study of 546 male college students from both Kenya (n=384) and the United States (n=162). Mahalik, Lagan and Morrison (2006) used a modified version of Courtenay's 60 item Health Belief Inventory to assess beliefs and behaviours associated with health risk behaviours. To assess men's conformity to masculine norms they administered Mahalik et al.'s (2003) 93 item CNMI. The purpose of this study was to replicate previous research examining men's masculinity in relation to health behaviours and to extend analysis to a larger number of health behaviours. The study found the CMNI scores had strong internal consistencies, for example, Kenya men's CMNI scores (M=137.21, SD 17.99) and United States (M=135.65, SD 19.60) were very close to the scores 134.45 (SD= 24.64) reported by Mahalik and colleagues in the United States. The main analysis of covariance (ANCOVA) was conducted to examine the hypotheses that Kenya and United States male University students' behaviour would be accounted for by participants' conformity to masculinity norms, nationality and the intersection of both. There was a significant association between 30 of the 52 items and the variables in the study. Results indicated that regardless of nationality, conformity to traditional masculine norms was associated with getting into physical fights, difficulty with managing anger, not seeking help for emotional difficulties, not going to health care appointments, unhealthy alcohol use, neglecting preventive care associated with skin cancer and health screenings, and taking risks generally. They concluded that traditional masculine norms related to lower levels of health promoting behaviours and higher levels of health risk behaviours and confirmed findings from Courtenay's study that traditional masculine norms had a negative impact on health behaviours and practices.

Similarly, in 2007, Mahalik, Levi-Minzi and Walker conducted a quantitative study with 253 Australian men. To assess behaviours and beliefs associated with health risk behaviours. They used Courtenay's 48-item HBI (Courtenay, McCreary, & Merighi, 2002) and Mahalik, et al.'s (2003) CNMI to determine whether Mahalik, Lagan and Morrison's (2006) findings were replicable in a sample of Australian men. They posited that men's health behaviours would significantly relate to their conformity to traditional norms of masculinity. Results indicated that masculinity related to fewer health promotion behaviours and more health risk behaviours. It supported the findings of previous
research, and determined the findings were generalisable to men in other countries. In this respect, several large-scale quantitative studies found men's health behaviours and beliefs were significantly related to masculine norms, and they provided substantial empirical evidence to support their hypothesis', that men that endorsed traditional masculine norms demonstrated poorer health practices. In conclusion, a large body of empirical evidence found that a hegemonic form of masculinity had a negative influence on men's health beliefs, behaviours and practices, and hence, their health outcomes. This was particularly evident among male farmers, and the review revealed hegemonic masculinity was a dominant form of masculinity among male farmers. Yet, there was a lack of available literature in Ireland, albeit, Ni Laoire's (2005) study, that examined the construction of hegemonic masculinities among Irish men.

In the context of this study, gender, and particularly hegemonic masculine discourse was drawn upon to provide a more nuanced understanding of the study's findings. In this sense, it was important to understand the process and theoretical underpinnings of hegemonic masculinity to understand the influence it may have on male farmers' health beliefs, attitudes and practices. In Ireland, little attention has also been paid to the process of gender socialisation on male farmers' health and the direct influence it has on their concomitant beliefs, behaviours and practices (Cassidy, 2014). In this respect, the socialisation processes that begins in childhood and determines the codes of behaviour that are deemed to be gender appropriate behaviours and practices for males was considered pertinent to comprehend the implications the title 'farmer' bestows on male farmers from a young age, and to appreciate the influence it had on their health beliefs, attitudes and practices.

2.3 Lay conceptualisations of health
Lay conceptualisations of health was the second central concept that underpinned this study. The following section outlines the paradigm shift in the conceptualisation of health. It explores the emergence and contribution of lay perspectives of health within the field of health discourse. It then provides an overview of men's lay conceptualisations of their health and responsibility for their health. Finally, it concludes
with the support of a large body of empirical evidence that men's beliefs and attitudes directly influence their concomitant health behaviours and practices.

2.3.1 Medical model of health
The concept of health has evolved from a narrow to a broader concept over time. Traditionally, the biomedical or medical model of health was the most dominant discourse in healthcare (Hughner and Kleine, 2004). It was a disease orientated approach to health which focused on the diagnosis, treatment and cure of disease (Antonovsky, 1996; Shah and Mountain, 2007). The term 'biomedical' comes from the Greek word *bios* meaning *life* and the Latin word *medical* meaning *healing*. The disease focus on health was strongly influenced by philosophers such as Christopher Boorse\(^{28}\), who posited health as an objective value free state. This essentialist perspective reflected the values of medical discourse of the early 20\(^{th}\) century and defined health as 'the absence of disease' (Amzat and Razum, 2014, p. 26; Werkhoven, 2014). It prevailed as the global perspective on health until the late 20\(^{th}\) century.

There have been a number of criticisms of the biomedical model of health over the years. For instance, it has been criticised as being deterministic and reductionist because it was overly focused on physiology and bodily functions to define health and disease (Hughner and Kleine, 2004). It has also been critiqued for its dualistic approach to health, because it viewed the body and mind as separate entities. The narrow pathological focus of the medical model meant it ignored the broader factors that influenced individuals' health. In addition, healthcare professionals held a powerful role as the expert and the power imbalance encouraged a paternalistic approach to healthcare. In this sense, individuals' subjective experiences of health and illness were overlooked by diagnostic tools and 'expert' knowledge grounded in empirical evidence, objectivity and impenetrable to normative values and denied a normative or subjective dimension of health existed (Werkhoven, 2014). However, the second half of the 20\(^{th}\)

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\(^{28}\) Christopher Boorse was best known for defending the thesis that health and disease were descriptive concepts that were naturalistic, purely scientific and value-free terms. In this sense, Boorse defined health positively as 'normal functioning' and negatively as the 'absence of disease' (Werkhoven, 2014, p. 23).
century seen the focus slowly shift from a medical model of health towards a social model.

2.3.2 Social model of health
The narrow perspective of the medical model became more evident after World War II when the focus on health and disease shifted from acute illness to chronic disease. During this period, the inherent limitations of the medical model surfaced when ‘organ focused’ curative interventions were ineffective in the treatment of individuals’ experiencing multi-morbidities (Jadad, 2013, p. 288). In an attempt to move away from this approach, the World Health Organisation (WHO, 2006a, p. 1), adopted a broader social model of health in 1948, and it has prevailed as the global definition ever since then as a: ‘state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity’. The social model provided a broad, holistic and multidimensional concept of health. It acknowledged health extended beyond ‘bodily functions’, and identified physical, mental and social (behavioural and spiritual aspect) as three major interrelated components of health (Amzat and Razum, 2014, p. 22). This definition of health complemented rather than debunked the medical model of health and marked a change in the conceptualisation of health in medicine (Amzat and Razum, 2014). It acknowledged individuals were social beings. In this respect, it recognised that health was affected by social behaviour and interactions (Jadad, 2013).

2.3.3 Lay definitions of health
The social model influenced the exploration of the subjective dimension of health. In this sense, lay conceptualisations of health became a valued form of knowledge within

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29 Chronic disease is defined as ‘long-term conditions, lasting more than six months, are non-communicable and involve some functional impairment or disability and are usually incurable. Many of these are caused by lifestyle factors and other determinants of health including tobacco and alcohol consumption, diet, physical activity, obesity, accidents, the working environment, and finally other environmental factors. There are strong links between mental and physical health, with both related through common determinants such as poor housing, poor nutrition, poor education and common risk factors such as alcohol’ (DoHC, 2008, p. 9).

30 During the Ottawa Charter for Health Promotion in 1986, the WHO stated that health was ‘a resource for everyday life, not the objective of living. Health is a positive concept, emphasising social and personal resources, as well as physical capacities’ (WHO, 1986, p. 1). However, the WHO definition of health has not been amended since 1946, and it remains the global definition of health (Jadad and O’Grady, 2008; Amzat and Razum, 2014).
the field of medical and health discourse (Calnan, 1987; Blaxter, 1990; Hughner and Kleine, 2004; Richardson, 2004; Amshoff and Reed, 2005; Robertson, 2006; Smith, et al., 2008; Hervik, 2016). For instance, in 1984, Mildred Blaxter conducted the first large-scale study of *Health and Lifestyles* with over 9,000 adults in Britain (Blaxter, 1990). Her seminal work highlighted the concept of health was highly subjective, relative, and complex to define, because it was based on individuals own assessment and judgement of whether they were healthy or not, and she found health meant different things to different people (Blaxter, 1990). In this sense, she found a major dimension of health was the lay concept of health, and from this perspective she identified three states of health existed, and they were based on fitness, the ability to function, and the absence of illness. The study concluded that the medical model strongly influenced the lay populations' conceptualisations of health. Others studies that researched lay concepts of health over the decades have pointed to similar findings. For example, Calnan (1987), Richardson (2004), Amshoff and Reed (2005), Robertson (2006) and Smith, et al., (2008) found health was defined as synonymous with work performance and the functional ability to carry out everyday tasks. It was also commonly related to fitness, physical strength, and the absence of illness. In this regard these studies found that men used their bodies to define their health. In a three year large-scale multiple methods study of Irish men's lay conceptions of health, Richardson (2004) found men's bodies were used to define their health. For instance, farmers' definition of their health was synonymous with physical fitness and their ability to work, while for other men particularly younger men, it was their physical appearance and physique that was used to define their health. In this respect, it appears men perceived different bodily parameters portrayed health status and they used their bodies to monitor their health (Robertson, 2006; Smith, et al., 2008).

It seems the WHO's definition of health encouraged a more holistic and broad perspective towards health. It marked a shift away from the medical model and encouraged research into lay conceptualisations of health. Although lay

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31 'Lay' was a prevailing term used in the literature to describe individuals that were non-healthcare professionals, but who had specialised knowledge related to health (Entwistle, et al., 1998).

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conceptualisations of health still reflected the influence of the medical model and traditional values about work (Calnan, 1987; Hughner and Kleine, 2004). Researchers equally acknowledged that individuals lived experiences of health were complex and sophisticated understandings that go far beyond the medical model, and offer the greatest insight in understanding individuals’ conceptualisations of health (Blaxter, 1990; Richardson, 2004; Robertson, 2006).

However, the WHO’s definition of health has also been heavily criticised since its conception in 1946 (Callahan, 1973; Simmons, 1989; Jadad and O'Grady, 2008; Huber, et al., 2011). One of the main criticisms was the inclusion of the word ‘complete’ in the definition, because it was unrealistic and unattainable to imagine that anyone can have ‘complete’ health throughout their lifespan (Nordenfelt, 2007). The definition overlooked individuals with chronic disease, and overtime it became increasingly unsuitable, because global life expectancy had increased and health trends shifted from acute to chronic disease (Jadad and O'Grady, 2008). In this sense it was problematic, because it implied individuals with chronic illness or disability were definitively ill, and it excluded a large proportion of the population (Huber, et al., 2011, p. 2).

2.3.4 Lay perspectives of health
Lay perceptions of health and illness began to emerge and further challenged the WHO’s definition of health. For instance, some argued that individuals can have a disease without being ill, and perceive themselves as healthy, and equally have a disease without any awareness of it, and perceive themselves in good health (Nordenfelt, 1993). Paterson’s (2001) study supported this claim, as she argued individuals interpret and respond to health and illness based on their ‘perception of reality, not the reality itself’ (p. 23). In a metasynthesis of 292 adults with chronic illness, Paterson’s (2001) Shiftig Perspectives Model of Chronic Illness found both health and illness co-existed in individuals with chronic illness, because their perceptions shifted between illness and wellness. Similarly, Audulv, Asplund and Norbergh (2011), in a phenomenographic study of 26 Swedish adults with a variety of chronic diseases was reminiscent of Paterson’s (2001) study, and expanded on her work by conducting a more in-depth enquiry of the shifting perspectives experienced by individuals with chronic disease. Other studies
shared comparable findings. For example, Shadbolt, Barresi and Craft (2002) used self-rated health (SRH) to assess cancer patients' perceptions of their health. In their analysis, they used cox regression to compare changes in SRH over 18 weeks. The study found SRH was the strongest predictor of survival from baseline, and revealed as many as 62% of this cohort, despite having advanced incurable cancer considered themselves to be in good health. In this sense, empirical evidence revealed the significance of individuals' perceptions of their health was an important dimension of health that needed to be understood.

2.3.4.1 Men's lay perceptions and the influence on their health behaviours and practices
Other studies began to research men's lay perceptions of health and the concomitant influence on their health behaviours and practices. For example, in Getting Inside Men's Health, a large-scale study of Irish men's lay perceptions of their health, Richardson (2004) used linear regression to show that 46.8% of men who had reported their health as poor (39.7%), had also neglected their health, and he found they were 5 times more likely to report negative self-care practices than those who reported good health. In this sense, he showed that men's perceptions of their health directly influenced their health practices.

In the context of male farmers, Storey, et al. (2014) in a cross sectional modified version of the Survey of Lifestyles, Attitudes and Nutrition (SLAN) examined the health and health behaviours of 366 farmers in the South East of Ireland in 2013. According to Body Mass Index (BMI), 60% of Irish farmers were overweight or obese, but just 27% of them believed that they were 'too heavy'. The majority of farmers (64%) also perceived their health as 'excellent' or 'very good', despite, the fact 28% of them had reported lower back pain, and other research that had been conducted concurrently, had revealed that male farmers in Ireland were experiencing a disproportionate burden of cardiovascular

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32 SLAN was a National Health and Lifestyles Surveys commissioned by the Department of Health and Children (DoHC) in Ireland in 2007. It involved face-to-face interviews with over 10,000 adults, along with a sub-study on body size of approximately 1,000 younger adults (aged 18-44) and a more detailed physical examination of over 1,200 adults (aged 45 years and over). The survey provided baseline data on a range of lifestyle related health behaviours in the Irish population, such as smoking, alcohol consumption, diet and physical activity. In addition, SLAN 2007 was the first time, data on mental health was collected (Morgan, et al., 2008).
disease and cancer in comparison to other occupational groups (Smyth, et al., 2012). This is similar to Mercer-Grant, et al.’s (2011, p. 244) findings in Australia, where nearly 90% of farmers rated their health as ‘good’ or ‘excellent’. Despite the fact 35% of them experienced moderate to severe back pain in the preceding month. They also perceived themselves to be fitter than they actually were. For instance, they believed, because ‘they were physically active on the farm, they were physically healthy’, and they perceived farming as a healthy lifestyle because they ‘lived in the fresh air’. However, Mercer-Grant, et al. (2011) found as a group, farmers had a higher burden of chronic illness and higher rates of morbidity and mortality than the general population.

By comparison, in the United States, Amshoff and Reed (2005, p. 306) found farmers believed they were healthy ‘as long as they could get up in the morning and work outside’. They concluded from surveys with 725 farmers and their spouses, that farmers’ perception of their health status was synonymous to their work performance. For example, 43% of farmers believed that they were healthy ‘as long as they could work’ and hence, they continued to work for as long as they had the ability to do so. This finding was confirmed in other studies by Deborah Reed. For instance, in a 5 year longitudinal study of retired farmers (n=606) over the age of 50, Reed and colleagues found that despite retirement and their functional ability to work on the farm, farmers (n=93) still continued to do farm work. The prevailing reasons were because they (i) ‘Can’t sit around’ (30%), it (ii) ‘Keeps me healthy’ (29%), and they (iii) ‘Like to work’ (27%) (Winter, Reed and Westneat, 2009, p. 8). While the study provided interesting insight into lay perceptions of retired farmers it was not representative of farmers in the United States, because the study did not employ random sampling. In sum, it appears that lay perceptions of health were important to understand, because regardless of actual health status, it was individuals’ perceptions of their health status that determined concomitant behaviours and practices.

2.3.4.2 Men’s lay perceptions of responsibility for their health
In recent decades, as lay perceptions of health emerged as an area of significant interest to researchers, a growing body of qualitative and quantitative research began to examine men’s perceptions of their health, and the influence it had on their health
behaviours, practices and outcomes (Richardson, 2004; O’ Brien, Hunt and Hart, 2005; Robertson, 2006; Smith, et al., 2008; Buckley and O’ Tuama, 2010; Richardson, 2010; Verdong, Seesing and Rijk, 2010; Garcia, 2013; Stough-Hunter, 2015). A reoccurring theme explored in these studies of men’s perception of their health was their responsibility for health. For example, Robertson (2006) undertook focus groups and in-depth interviews with 20 lay men and 7 healthcare professionals in England to explore men’s conceptualisations of their health. Similar to Backett’s (1992) qualitative study of middle class families in Edinburgh, Robertson (2006) found health was integrated into men’s daily lives and was an unconscious practice that was more of a routine and a habit, rather than a conscious activity.

However, Robertson (2006) showed complex and contradictory relationships existed between men and their health practices. For instance, he noted men used rhetorical distancing to manage the tension they experienced between two conflicting discourses which he referred to as the ‘don’t care/should care’ dichotomy (p. 181). First, the moral connotations for individuals within society to take responsibility for their health and second, that ‘real’ men are unconcerned about their health. The study concluded men understood responsibility for their health as striving for a healthy balance between ‘control’ and ‘release’, and ‘risk’ and ‘responsibility’. Robertson’s (2006) study highlighted the influence of hegemonic masculinity on men’s perceptions of their health and responsibility for their health. It was also distinctive because it included the perspectives of seven healthcare professionals who believed men failed to accept responsibility for their health and markedly contrasted with the lay conceptualisations of the men in the study. In this sense, the study identified a gap existed between healthcare professionals and men’s lay conceptualisations of health and health practices.

Men’s struggle to balance autonomy and control over their health resonated with other studies (Backett, 1992; Smith, et al., 2008; Richardson, 2010; Oliffe, et al., 2015; Stough-Hunter, 2015; Caddick, et al., 2016). For instance, in a study of rural men’s perceptions of their health, Oliffe, et al. (2015) interviewed 21 men in rural towns in British Columbia,
Canada. The study found men struggled with the balance between their work and their health. Men in the study positioned their ability to adopt healthy practices in the context of their work. Men perceived the physical strength they used on manual labour at work was an adequate form of exercise, and diminished the need for other forms of physical fitness. The study concluded work performance and productivity dictated health practices such as healthy eating and exercise. It appears men placed more value on their work than on their health, and their beliefs and behaviours reflected traditional masculine norms that reinforced their masculine identity as the 'breadwinner' and provider of the family.

This conclusion was supported by a multiple methods study with lorry drivers in the UK. Caddick, et al. (2016) found similar tensions existed in regards to men’s moral responsibility for their health, and the simultaneous expectation to disavow practices that showed concern with health in a feminised manner. Men struggled to achieve healthy practices due to the constraints of their work, and they adopted the position of the ‘average man’ to deflect unrealistic or unwelcome expectations regarding health promoting behaviours (p. 21). The study argued lorry drivers health problems were due to a neoliberal economic society that focused on individual responsibility for health, and at the same time valued efficiency, productivity and economic growth as the core activities of everyday working life. The study concluded men’s health discourse was embedded in the wider determinants of health and the challenges lorry drivers faced in their everyday lives needed to be addressed to improve their health behaviours and outcomes.

The findings resonated with Richardson’s (2010) study of 24 men, aged 18-71 in Ireland. He used semi-structured interviews to explore their conceptualisations of responsibility for their health. He found that a neoliberal approach to health was problematic with a group such as men who struggled with responsibility for their health, and supporting Caddick, et al.’s (2016) conclusion, he argued a wider determinants approach to men’s health was more appropriate rather than the current individual moralistic approach. Richardson (2010) found most men lacked basic awareness of their health and took it
for granted until they experienced events such as fatherhood, a deterioration in their physical health or after a health crisis. He found men desired to be responsible for their health, but struggled with translating this into their health practices. For other men irresponsible actions were deliberately enacted to reinforce masculine identity and prove they were 'real' men. While, both Robertson's (2006) and Richardson's (2010) studies explored men's understandings of their health, Richardson's (2010) study specifically focused on men's conceptualisation of responsibility for their health. He highlighted men either legitimatised their lack of concern for their health, perceived health as predetermined and outside of their control or divested responsibility for their health to women. The study concluded that men's lack of awareness about their health meant they were unable to distinguish between irresponsible and responsible health practices.

Additional studies lend further support to men divesting responsibility for their health to women (O'Brien, Hunt and Hart, 2005; Smith, et al., 2008; Buckley and O'Tuama, 2010; Garcia, 2013; Stough-Hunter, 2015). For instance, Buckley and O'Tuama (2010) used focus groups with 18 older men in County Cork to explore men's behaviours and attitudes towards their health. They found men perceived health and health seeking behaviours and practices as feminine and as 'unmanly' traits (p. 593). They also found fear and fatalistic perceptions of diagnosis influenced men to self-monitor and self-diagnose their own health issues rather than seek help. The small sample size did not allow for generalisation, but it provided interesting insight into men's perceptions of their health in Ireland.

The findings of this study resonated with Smith, et al.'s (2008) qualitative study of 36 Australian men. Using semi-structured interviews, she explored men's perspectives of help seeking and health service use. The study found four key factors influenced how men self-monitored their health and help seeking: length of time available to monitor health and legitimate help seeking; previous illness experiences; capacity to maintain regular activities and everyday tasks; and perception of the severity of health concerns. Illness severity was identified as a significant factor that influenced the way men
monitored their health. Men used the time of onset, the level of physical pain or physical impairment they experienced, and the level of impediment to their daily functioning, to measure the severity of an illness. The study concluded that men used their physical bodies to conceptualise their health, and monitor their health status.

The findings of this research was supported by several other studies (O' Brien, Hunt and Hart, 2005; Buckley and O’ Tuama, 2010; Stough-Hunter, 2015). For example, in a study of 55 Scottish men aged 15-72, O’ Brien Hunt and Hart (2005) undertook 14 focus groups to explore men’s experiences of help seeking. They found the majority of men conformed to traditional hegemonic norms of expected behaviours, and perceived showing concern to ‘minor’ symptoms was a weakness. To conform to hegemonic masculine practices they espoused strength and silence to symptoms. Help seeking was only sought when men perceived it as legitimate such as when they were obviously injured, seriously ill or pressurised by a female spouse to seek help. However, they concluded that men that delayed or avoided treatment for symptoms they perceived to be ‘minor’ may actually have had more serious symptoms that they trivialised or overlooked, because they were uncertain what constituted a serious issue. Similarly, Stough-Hunter (2015) used in-depth interviews with 13 men aged 34-70 in a rural area of Pennsylvania, to examine the impact of their conceptualisations of masculinity and class identity on their health beliefs and practices. The study found men used the categories of ‘reliever’ and ‘non-reliever’ as terms of reference to delineate a hegemonic masculinity within the community, and to explain their health beliefs and practices. The study concluded men perceived personal responsibility for health was a signifier of dominant hegemonic masculinity, but similar to previous research such as Richardson’s (2010) study, this responsibility did not translate into their health practices.

The study findings reflected those of O’ Brien, Hunt and Hart’s (2005) and Smith, et al.’s (2008) study, as men delayed seeking help for a health issue until they perceived it was

33 In Stough-Hunter’s (2015) study, the terms ‘reliever’ and ‘nonreliever’ were used by respondents to describe men’s position relative to other men within the community. A ‘reliever’ was explained by the respondents as anyone who received ‘handouts’ from the government. The term ‘reliever’ was a negative stereotype used by men that distinguished themselves from ‘relievers’. In this sense, ‘non-relievers’ perceived themselves as the opposite to ‘relievers’, and as the embodiment of hegemonic masculinity.
serious enough to warrant a General Practitioner (GP) visit. All three of these studies found, to attend their doctor for a ‘minor’ issue would threaten their dominant masculine status (O’Brien, Hunt and Hart, 2005; Smith, et al., 2008; Stough-Hunter, 2015). Although, Smith, et al.’s (2008) study argued men did monitor their health, O’Brien and colleagues raised an important concern about men’s uncertainty and the associated dissonance between what constituted a ‘minor’ and a ‘serious’ issue. In this regard, O’Brien Hunt and Hart’s (2005) study appears to have delved into the complexities and nuances of men’s delayed help seeking more so than Smith, et al.’s (2008) and Stough-Hunter’s (2015) analysis. However, in all three studies it was evident that men’s perceptions of the seriousness of a health issue was a significant influence on their concomitant health behaviours, practices and outcomes.

In regards to Stough-Hunter’s (2015) study, the use of snowball sampling produced a relatively homogenous sample of ‘non-relievers’. In this respect, all men interviewed expressed a dominant hegemonic form of masculinity. There was no representation of other forms of masculinity and the perceptions and experiences of ‘relievers’ were only from the opinions of those who stigmatised them. In this light, the study was unable to generalise. However, the study’s findings resonated with previous studies, and showed men that exhibited a dominant hegemonic masculinity were more likely to conceptualise personal responsibility for their health, but they were also more likely to perceive health and help seeking practices as feminine and weak. In this respect, men who endorsed hegemonic ideals of masculinity were more likely to demonstrate irresponsible health practices such as delayed help seeking than men who believed in less traditional dominant forms of masculinity.

In conclusion, a large body of empirical evidence showed that lay perceptions of health were sophisticated and valued forms of knowledge that needed to be understood, because they directly influenced individuals’ health behaviours and practices. It seems that regardless of actual health status, it was individuals’ perceptions of their health status that determined concomitant behaviours and practices. In this sense, the review supported Paterson’s (2001, p. 23) theory, that it was the ‘perception of reality, not the
reality itself that influenced lay perceptions of health, health behaviours and health practices. In the context of male farmers, the literature revealed that farmers’ perceptions of their health were strongly associated with their bodies’ physical ability to do farm work. It equally found that their perceptions and beliefs about their health and their health practices contradicted their actual health behaviours and practices and raised the obvious question, do farmers’ health beliefs and attitudes influence their health behaviours and practices? In Ireland, the literature identified scant attention from few studies (Storey, et al., 2014) in relation to male farmers’ health beliefs and attitudes, and the concomitant influence they may have on their health behaviours and practices. In this sense, further research was required to address this gap in the literature.

In addition, a large body of both quantitative and qualitative studies showed that men’s perceptions of their health and responsibility for their health directly influenced their behaviours and practices. This section of the review highlighted that men struggled with responsibility for their health, and found it difficult to achieve a balance between work and health. The review revealed that men’s work responsibilities was given primacy over other responsibilities such as health, because men were socialised from young age to place the utmost importance on their ability to work. In this sense, the review found health and health practices were segregated to girls and women, and hegemonic men divested responsibility for their health to females, because they perceived it as a feminine concept. It appears two conflicting discourses were evident in the review of the literature. Men had the moral connotations to be a responsible citizen, and on the other hand, they had to be unconcerned with health to be a ‘real’ man. Robertson, (2006) referred to this struggle men experienced as the ‘don’t care /should care’ dichotomy (p. 181). The review also raised concerns about men’s perceptions of their health and more specifically their perceptions of the seriousness of a health issue. For instance, studies such as O’ Brien, Hunt and Hart’s (2005) research found men that delayed or avoided treatment for symptoms they perceived to be ‘minor’, may actually have had more serious symptoms that they trivialised or overlooked, because they were uncertain what constituted a serious issue. In this respect, it raised important questions about male farmers’ help seeking practices. However, the review revealed that scant
attention had been paid to male farmers conceptualisations of their health and their responsibility for their health. Little was also known about their help seeking practices (Roy, Tremblay and Robertson, 2014). In this sense, it raised obvious questions such as (i) do male farmers' access health services? If not, why not? And, (ii) do male farmers delay in accessing health services? If they do delay, why so?

The review also identified that few studies addressed the views of healthcare professionals in regard to their insights of male farmers’ health beliefs, behaviours and practices (Robertson, 2006). This seems peculiar, since existing literature referred to rural men as a ‘hard to reach’ group (Carroll, Kirwan Lambe, 2014), and male farmers as ‘challenging’ (Van Doorn, Richardson and Osborne, 2014, p. 9). For instance, healthcare professionals referred to men as a ‘hard to reach’ group (Sydor, 2013), because they were seen as reluctant users of the health services (Bonevski, et al., 2014). They were considered as disinterested in their health by healthcare professionals (DoH, 2016) because they engaged with the health services (too) late in the onset of an illness (DoH, 2016). In the context of male farmers, they have been referred to as a ‘hard to reach’ group in terms of responsibility for their health, and their use of the health services (Evans, et al., 2009b; Carroll, Kirwan and Lambe, 2014). Others have referred to male farmers as a ‘hard to reach’ group because they live in remote physical and geographical locations which makes them a ‘challenging’ group to reach due to the nature of their work and their distance from accessing services (Van Doorn, Richardson and Osborne, 2014, p. 9). Yet, little research had explored the use of the term ‘hard to reach’ with healthcare professionals that have engaged with male farmers, to understand how they conceptualise male farmers as a ‘hard to reach’ group. In this light, further research was required to address these gaps in the literature, and to determine what the term ‘hard to reach’ meant in relation to male farmers in County Kerry.

2.4 Social determinants of health
Traditionally, farmers’ health has been viewed from a narrow perspective, and research has primarily focused on occupational health and safety (Van Doorn, Richardson and Osborne, 2014; Furey, et al., 2016). However, this study viewed male farmers’ health
from a broader and more holistic perspective. It acknowledged that beliefs and behaviours towards health are directly influenced by individuals’ broader life context and are effected by where they ‘grow, live, work and age’ (Commission on Social Determinants of Health (CSDH), 2008, p. 2). In this respect, the study adopted a social determinants of health (SDOH) approach to male farmers’ health. Dahlgren and Whitehead’s (1991) SDOH approach to health was the third theoretical concept that grounded this study (WHO, 2006b). It was adopted to provide a broader analysis of male farmers’ health beliefs, attitudes and practices.

The framework assumes a social ecological theory to health and acknowledges that there are several layers of influence on health. It recognises the relationship between the individual, their environment and health. Figure 1 provides a diagrammatic illustration of the rainbow-like layers of influence that Dahlgren and Whitehead’s (1991) framework utilises to conceptualise SDOH. In the centre of the figure, individuals’ biological factors such as age, sex and constitutional characteristics that influence their health and that are largely fixed and unmodifiable (WHO, 2006b). Surrounding them, however, are influences that are theoretically modifiable by policy. The first layer of influence on individuals’ health are their personal beliefs that influence either health damaging or health promoting behaviours. The second layer of influence relates to the level of interaction, social cohesion and community support for individuals in their community in unfavourable conditions. The third layer of influence are structural factors or macro layers of influence such as the effects of the economy, or cultural and social
factors such as housing and work conditions on individuals’ health. The fourth and final layer of influence on health represents the economic, cultural and environmental influences that prevail in the overall society. In this sense, the SDOH framework conceptualises individuals’ lifestyles (health beliefs, behaviours and practices) as embedded in social norms and networks, and in living and working conditions, which in turn are related to the wider socioeconomic and cultural environment (WHO, 2006b). In this light, Dahlgren and Whitehead’s (1991) framework was very applicable to understand the health beliefs, attitudes and practices of male farmers in Kerry.

The study’s primary focus was on the first layer of influence, and male farmers’ personal beliefs and behaviours were the fundamental aim of the study. However, the study also posited from the outset, that male farmers health was inseparable from their lives and equally that their lives influenced their health beliefs, behaviours and practices (Caddick, et al., 2016). In this respect, Dahlgren and Whitehead’s (1991) framework was used to provide a broad and holistic analysis of male farmers health beliefs, behaviours and practices. It was adopted to understand both the micro and macro layers of influence on male farmers’ health. The micro layers of influence that were considered significant to this study have been discussed in relation to gender and lay conceptualisations of health. In this sense, this section focuses on the macro or wider layers of influence on male farmers’ health and their concomitant beliefs, behaviours and practices.

2.4.1 Male farmers’ health status in Ireland

Irish male farmers health has deteriorated over the last twenty years (Evans, et al., 2009b; Smyth, et al., 2012; Van Doorn, Richardson and Osborne, 2014). Traditionally, farming was associated with a healthy lifestyle (Blair, et al., 2005). For instance, in a large-scale quantitative study of 52,393 farmers in Iowa and North Carolina, Blair, et al. (2005) used survey design to evaluate the risk factors for disease in rural farm populations between the of years 1993 to 1997. The study found farmers had a

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34 In phase one of the study, to enrol on the programme participants completed a 21-page questionnaire at the county pesticide licencing facilities, and they were recruited from 1993 to 1997. Phase two of the study was between 1998 and 2003 and participants took part in a computer-assisted telephone interview, completed a second questionnaire at home and were asked to provide a buccal cell sample to provide a source of Deoxyribonucleic Acid (DNA) for evaluation of the role of genetic factors and gene exposure interactions in the development of disease (Blair, et al., 2005).
significant deficit in mortality rates in comparison to the general population. They concluded farmers were a healthy occupational group and attributed this to healthy lifestyle practices that included low smoking rates, moderate use of alcohol and higher levels of physical activity than the general population. One obvious limitation of the study was that nearly half of all participants never returned the second self-completed questionnaire and this limited the data that was obtained on their personal habits, lifestyle practices and medical conditions. Yet, the study offered strong empirical evidence of the health status of farmers in the United States.

By comparison, Smyth, et al. (2012) found a stark contrast among Irish farmers mortality trends in the years subsequent to Blair et al.'s (2005) study. In their analysis of farmers in Ireland, Smyth, et al. (2012) used mortality data from 2000 to 2006 to calculate standardised mortality rates (SMRs) by cause of death. They compared farmers with other occupational groups and used multiple regression to assess the impact of socio-economic factors on mortality trends. They found farmers had the highest levels of mortality for all causes of death. For instance, they found farmers were 5.14 times more likely to die from any cause of death than other occupational groups. Circulatory disease was a significant cause of mortality among farmers (SMR = 215.91, 95% confidence interval (CI) = 201.83–229.98), others included cancers (SMR = 156.60, CI = 146.73–166.48) and injuries and poisonings (SMR = 149.69, CI = 135.44–163.93), and multiple regression identified farm size and income poverty risk were predictors of mortality. The study concluded Irish farmers had experienced a reversal of mortality trends compared to the 1980s and 1990s and identified farmers as a high-risk group.

In Ireland, farmers' poor health status has been recognised for over a decade (Bilanda and Wilde, 2001). In a report on mortality and morbidity data over a ten year period (1989-1998) in Ireland, Bilanda and Wilde (2001) found farmers had significantly worse rates of cardiovascular disease than the general population. In light of this, in 2005, the Health Service Executive (HSE) developed the Farmers Have Hearts (FHH) cardiovascular screening project in County Roscommon. The programme assessed the cardiovascular health of 291 farmers during 2007 and participants were recalled after six months to reassess their health in comparison to the baseline data collected in the initial visit. Farmers were found to have many of the risk factors associated with CVD. For example,
farmers had high blood pressure (56%), high cholesterol levels (39%) and were overweight (44%) or were obese (42%). The programme also found that alcohol consumption and smoking habits among farmers was higher than the national average (Evans, et al., 2009a; Evans, et al., 2009b). The recall visit found farmers blood pressure had significantly improved (high blood pressure was reduced by 16%). However, they found there was minimal changes (3%) to farmers' weight and 82% of them remained overweight or obese. It appears that a significant limitation of the study was that only 21% of farmers returned for the recall visit, and there was no indication as to why they never returned. Both the programme and an evaluation of the programme that took place in 2007, concluded that farmers required further targeted cardiovascular health interventions (Evans, et al., 2009a; Evans, et al., 2009b).

In this respect, the IHF was contracted by the HSE to carry out a further 1,000 free heart health checks to farmers at marts around Ireland from October 2013 until May 2014. The programme analysed the data from 310 farmers' heart health check results. The analysis found 82.1% of farmers had a family history of a CVD, 46% had high blood pressure, 46.1% had raised total cholesterol levels and 86.4% of farmers were overweight or obese. In addition, 35.5% had not been physically active for 5 days or more a week, and 34.5% were not active for 30 minutes on physically active days. The majority of farmers perceived they were physically active in their occupation (95.4%) and 67.1% said they also exercised outside of work. Stress was experienced by 64.2% of farmers. In this respect, they found over 80% of farmers had multiple risk factors for CVD, and farmers were considered a high risk group.

After the heart health checks at the livestock marts, farmers were contacted at week 1 and week 12 by telephone, to determine if they had made any lifestyle changes. By week 12, 48.3% of farmers said they had made some changes to their lifestyle. For example, 92.7% said they increased their levels of physical activity and 89.1% said they had improved their diet. In comparison to the earlier FHH programme, it appears there was a significant increase in the levels of physical activity among this group of male farmers. For example, in the initial assessment nearly 70% of farmers said they engaged in physical activity on and off the farm, and after the FHH check, 12 weeks later this had
increased further to 92.7%, in comparison to the 39% male farmers who engaged in physical activity in the earlier FHH programme (Evans, et al., 2009b). Van Doorn, Richardson and Osborne (2014) found that 89.1% of farmers said that they had improved their diet, and this contrasted significantly with the findings of the earlier FHH programme which found minimal changes to diet. For example, Evans, et al. (2009b) found during the recall visit, 82% of farmers were still overweight or obese.

However, since the earlier programme conducted a recall visit and reassessed farmers from baseline data collected during the initial visit, it is reasonable to suggest that these results were more valid than the self-reports collected over the telephone in the latter FHH programme. In this sense, the level of behaviour change reported by farmers in the later FHH programme seems quite high considering it stemmed from a one day event at a livestock mart (Van Doorn, Richardson and Osborne, 2014). Since behaviour change itself is a complex and difficult task that requires ongoing support to achieve and sustain (Ryan, 2009), and only 5.5% of farmers accessed local health support after the latter FHH programme, the self-reports in relation to behaviour change may have been influenced by social desirability bias (Fisher, 1993) and possibly farmers inaccurate perceptions of their health behaviours and practices (Long and Mongan, 2014; Storey, et al., 2014). In this respect, the reported level of behaviour change must be considered with these potential limitations in mind. In addition, the use of a convenient sample size precluded the results from generalisation to the whole of the male farming population.

In conclusion, the FHH programme was the most notable attention paid to farmers' health in Ireland since 2001. The review acknowledged the contribution of the FHH to farmers' cardiovascular health in Ireland. It is clear that it was a positive health programme, in that it provided preventative health screening, health information and awareness, and encouraged hundreds of farmers in Ireland to attend their GPs. However, the FHH paid scant attention to the reasons for farmers' unhealthy lifestyle behaviours or acknowledged the influence of farmers' beliefs and attitudes on their

35 In this study, social desirability bias was understood as a type of response bias, where survey respondents answer questions in a manner that will be viewed favourably by others. It can take the form of over-reporting of 'good' behaviour or under-reporting of 'bad', or undesirable behaviour (Fisher, 2003).
concomitant health behaviours and practices. For example, in the earlier FHH programme nearly 80% of farmers never returned for the recall visit (Evans, et al., 2009b), and in the latter FHH programme, although 91.9% were advised to attend their GP after the heart health check, only a third of them did so (Van Doorn, Richardson and Osborne, 2014). In this sense, the majority of farmers never attended a follow up, despite being informed that they had a high risk of CVD. In the earlier FHH programme no indication was given as to why 80% of farmers never returned (Evans, et al., 2009b), and in latter FHH programme, the majority (73.3%) of farmers said they never attended a follow up with their GP because they ‘did not see sufficient reason to change’ (51.7%) and 11.1% said they never followed up with their GP because they were ‘not bothered with health’ (Van Doorn, Richardson and Osborne, 2014, p. 29). In this respect, over the last decade, the FHH programme appears to have been useful in establishing farmers’ health status, but, less effective in addressing the lifestyle behaviours that influenced their poor health status, and it has paid little attention to the influence of farmers’ health beliefs, attitudes and perceptions on their concomitant health behaviours and practices. In this light, further research was required to understand farmers’ perceptions and attitudes towards their health, and to determine the influence of these on their concomitant behaviours and practices.

2.4.2 Application of the SDOH framework to Irish male farmers
The current generation of farmers have experienced considerable changes to their lives (Shortall, 2014) and health in a short period of time (Smyth, et al., 2012). This section provides a succinct overview of some of the key changes over the last few decades in farming that coincided with a marked the deterioration in farmers’ health in Ireland (Smyth, et al., 2012). Since the 1990s farmers have experienced a number of cultural, social and environmental changes that has altered the context of farming and farmers health status in Ireland. From a social determinants perspective these wider structural factors or macro layers of influence were a prevailing concept in the review of the literature, and farmers working conditions was a dominant discourse. In this sense, the study acknowledged the wider layers of influence on farmers’ health beliefs, behaviours and practices, because they were inseparable from farmers’ lives and health (Caddick, et al., 2016). In a qualitative multiple method study of 24 lorry drivers in the UK,
Cadidick, et al. (2016) found that men's health was directly influenced by their working conditions and by the wider social determinants of health. They concluded to address the known problems of men's poor health status required a SDOH approach to their health behaviours and lifestyle practices rather than the current individualistic neoliberal approach. In this light, the following section adopts Dahlgren and Whitehead’s (1991) SDOH framework to understand the wider layers of influence on farmers' health beliefs, behaviours and practices over the last few decades. It outlines some of the economic, cultural and social changes that has altered the context of farming and farmers' health status in Ireland.

2.4.2.1 Economy
Since Ireland entered into the EU in 1973, there has been rapid changes to Irish agriculture and to the viability of farming in Ireland (Irish Farming Association (IFA), 2010). Irish agriculture became increasingly vulnerable to the vagaries of the international political, social and economic climates (Cassidy, 2014). Irish farms became heavily regulated by external forces, and particularly vulnerable to European polices such as the Common Agricultural Policy (CAP) and the World Trade Organisation (WTO) to protect Irish agricultural produce in the international markets (European Commission, 2016). The focus of these broad strategies were on productivity and modernisation of agriculture in Europe, and to maintain stable prices, and a reasonable standard of living for European farmers. However, over the years a number of serious flaws emerged under the CAP policy and farmers viability was threatened (European Commission, 2016). Overtime, the EU budget devoted to CAP was halved and the policy was reconfigured, subsequently, the focus on Irish agriculture became further diluted and farmers in Ireland began to struggle to remain economically viable (Cassidy, 2014).

2.4.2.2 Decline in farm incomes
Since the 1990s there has been a significant decline in farm incomes in Ireland (Smyth, et al., 2012). Farmers' incomes halved between the years 1995 to 2009, and they have experienced chronic price and income volatility over the last two decades (Connolly, et al., 2010; IFA, 2017). For example, the average farm income in Ireland in 2015 was €23,603, and this was only sixty percent of an average industrial wage (Hennessy and Moran, 2016). Many small farms in Ireland and particularly in the West of Ireland
struggled to survive and only remained viable due to off farm employment and farm subsidies (Ni Laoire, 2005; Hennessy and Moran, 2016). Irish farmers’ social economic gradient (SEG) was lowered to reflect the decline in their farm incomes (Smyth, et al., 2012), and it is well established that the lower an individuals’ SEG, the poorer their health outcomes (Bambra, et al., 2010; White, et al., 2011). It seems reasonable to suggest that farmers’ incomes and their working conditions over the last twenty years has influenced their health beliefs, behaviours and practices and thus, their health outcomes.

2.4.2.3 Working conditions
Many Irish farmers lost their independence as agricultural producers and Irish farms became heavily regulated by external forces (Meijboom and Stafleu, 2015). Farmers experienced stress related to rapid changes in farming and had to adjust to increased levels of competitiveness, regulations, administration, financial pressures and workload (Ni Laoire, 2005; Coldwell, 2007; Shortall, 2014; Cassidy, 2014; Furey, et al., 2016; Leonard, et al., 2017). It seems that farmers’ beliefs about farming and their role as a farmer have been challenged over the last few decades, and the significant changes to their working conditions has coincided with the deterioration in their health status.

2.4.2.4 Cultural
The socio-economic struggles in farming influenced a cultural shift among the next generation of farmers in Ireland. The increasing levels of social and economic challenges and cultural marginalisation in farming influenced many young men not to pursue farming as an occupation (Ni Laoire, 2005). Instead, many farm families encouraged their children to pursue an education instead of farm succession (Price and Evans, 2009). It signified a shift from the traditional ideology about farming and marked the outward migration of young males to urban areas (Cassidy, 2014). In this respect, the title ‘farmer’ held less duty and obligation in comparison to older generations, and it became more of an individual choice for a farmers’ son (Price and Evans, 2009). Consequently, farmers’ beliefs and attitudes to farming changed and directly influenced the significant decline in younger farmers entering farming (Ni Laoire, 2005). This has led older farmers to believe they have to continue working on farms despite their ability to do so, because
they have failed to secure a farm successor (Amshoff and Reed, 2005). In this sense, it appears the cultural shift between generations may have also influenced their health behaviours, practices and outcomes.

2.4.2.5 Social
Over the last few decades, increased mechanisation in farming reduced the need for physical manual labour. In this sense, it has meant that farming has become a less physically active job and communities are no longer required to lend additional labour to each other (Shortall, 2014). In this regard, the reduced requirement for manual labour and community involvement in agriculture, and the less active lifestyle meant farming became a more solitary and sedentary occupation (Ni Laoire, 2005; Roy, et al., 2013). For example, as previously discussed, farmers perceived farming as a healthy lifestyle, and perceived themselves as physically active and a healthy weight, when in fact empirical evidence suggested otherwise (Amshoff and Reed, 2005; Mercer-Grant, et al., 2011; Storey, et al., 2014). In this respect, it is reasonable to suggest that social changes in agriculture directly influenced farmers’ health beliefs, behaviours and practices, and hence, their health status. In sum, individuals’ health behaviours and practices are embedded in a broader social context, and are influenced by the wider determinants of health. In this respect, to truly understand individuals’ health beliefs, behaviours and practices, a social determinants approach to health must be taken (Caddick, et al., 2016).

2.4.3 SDOH conclusion
In conclusion, health research has predominantly focused on occupational health and safety among the farming population in Ireland (McNamara, 2007; Whelan, et al., 2009). This was identified as a methodological limitation of rural health research in Ireland. It has also highlighted a gap in the literature, because the narrow focus on farmers’ health has contributed to a limited knowledge base in both quantitative and qualitative studies in regards to male farmers’ health in Ireland. There was also scant attention paid to the effects of farmers working conditions on their lifestyle choices (Caddick, et al., 2016). Little attention was paid to the influence of social determinants of health on male farmers’ health behaviours and practices, even though they are embedded in farmers’ broader life context (Caddick, et al., 2016). For instance, although studies have examined
farmers lives and health, they appear to have treated different aspects of farmers lives as separate entities and in isolation to male farmers overall health and broader life context. For example, Leonard, et al. (2017) examined the economic implications to Irish farmers who fail to secure farm succession. Yet, the study never considered at any time, the negative effect on male farmers health and wellbeing. Similarly, Furey, et al. (2016) used several measures to gather data on farmers health and primarily focused on occupational health and safety, yet they never considered the impact of financial stress on farmers general health. In this respect, they excluded farmers’ lifestyle choices and physical health status and overlooked other broader social determinants of health in their examination of male farmers’ health. In light of this, further research was warranted to address this gap in the literature. The study was under no illusion that such significant gaps in the literature could be addressed in just one study. However, it was hoped that some attempt could be made at addressing the gaps in the literature by using mixed methods. Equally, it was hoped that by bringing attention to the significant gaps in the literature that other researchers would be encouraged to conduct further research in this area. In this sense, it was hoped that future research would explore male farmers’ health in a more broad and holistic perspective and acknowledge the influence of SDOH and their working conditions on their lifestyle choices. Since male farmers’ health beliefs, behaviours and practices are embedded in the broader socio-economic context of where they ‘grow, live, work and age’ (Commission on Social Determinants of Health (CSDH), 2008, p. 2).

2.5 Chapter conclusion
It appears that there has been scant attention paid to farmers’ health in Ireland. Many areas of their health are under explored, and it seems the research on male farmers’ health to date has been narrowly focused on occupational health and safety (Van Doorn, 2016). The study employed a correlational design and measured six variables. Farmer’s Expectations of Injury (FEI) constituted the outcome variable. It was estimated using the ‘susceptibility to a farm-related accident/illness’ factor of the Farm Safety and Health Beliefs Scale. Five predictors of Farmers Expectations of Injury (FEI) were measured: Financial Threat (FT), Non-Financial Farm Stress (FS), Social Support (SS), depression, and anxiety. Based on the JDR model, FT, Farm job stress, and SS constituted measures of available resources. Depression and anxiety were included as potential mediators of the effects of these variables on Expectations of injury. FT was measured using the Financial Threat Scale (FTS), FS, using the Edinburgh Farming Stress Inventory (EFSI), and SS, using the Multidimensional Scale of Perceived Social Support (MSPSS). Depression was measured using the Patient Health Questionnaire (PHQ-8) and anxiety, using the Generalized Anxiety Disorder Assessment (GAD 7) (Furey, et al., 2016).
Richardson and Osborne, 2014). Although studies have assessed their health status and identified their health problems (Evans, et al., 2009b; Smyth, et al., 2012; Van Doorn, Richardson and Osborne, 2014). Few studies were available that actually attempted to understand male farmers' health beliefs, behaviours and practices in Ireland (Storey, et al., 2014). Even the one study that was found to examine their perceptions of their health did not appear to pay enough attention to the implications of farmers' health beliefs on their concomitant behaviours and practices. In this respect, Storey, et al., (2014) never followed up with further research, to examine farmers' beliefs and attitudes to their health or to determine the influence they had on concomitant behaviours and practices.

In addition, little attention has been paid to the effect of farmers working conditions, and the wider social determinants of health on male farmers' lifestyle choices. There appears to have been an overreliance on FHH programmes to address male farmers' poor health status, even though male farmers' health issues have been acknowledged since 2001. The FHH programmes were positive in promoting male farmers engagement in cardiovascular screening, but as 'once-off' events they were less effective in addressing the antecedents that influence male farmers' unhealthy lifestyle behaviours and practices. There was a distinct absence of studies in relation to male farmers' conceptualisations of their health and responsibility for health. In this sense, it seems for the most part, that studies have overlooked male farmers, despite strong empirical evidence that men's lay perceptions of their health status determined their concomitant behaviours and practices, and this was an area that warranted further research.

Since the review revealed little was known about male farmers help seeking practices (Roy, Tremblay and Robertson, 2014), it was an area that required further research. In this respect, the distinct absence of literature in relation to male farmers in Ireland also seems to suggest that researching male farmers may present methodological challenges to researchers. Yet, little research was available in regards to attempts made by healthcare professionals to engage with male farmers, and even less research exists in relation to healthcare professionals unsuccessful attempts to engage with male farmers.
in Ireland to justify the use of the term 'hard to reach' in relation to male farmers. In this context, research was required to understand the methodological challenges researchers face when researching 'hard to reach' groups. Equally, this research was required to gain insights into healthcare professionals perspectives of male farmers' health beliefs, behaviours and practices, and to understand how they conceptualise male farmers as a 'hard to reach' group. In conclusion, this study attempted to address a number of significant methodological gaps in both quantitative and qualitative studies by utilising a mixed methods sequential explanatory research design. This research approach aimed to achieve both breadth and depth in one single study, which would have been impossible with the use of either quantitative or qualitative data alone (Halcomb and Hickman, 2015). In this regard, the study sought to contribute to a significantly under explored knowledge base.
Chapter 3: Methodology

3.1 Introduction
This chapter explains the mixed methods sequential explanatory design of the study. It describes the aim and objectives of the study, the choice of research design, methodologies and sampling. It then discusses the procedures that were employed in both the quantitative and qualitative phases of data collection and data analysis. As the chapter progresses it outlines the ethical dimensions of the research process and describes the study’s rigor. Finally, it closes by acknowledging the study’s limitations and contributions.

3.2 Study aim
The main aim of this research was to examine male farmers’ health beliefs and attitudes, and determine the influence of these on their concomitant behaviours and practices.

3.3 Research questions
The central research question investigated in this thesis was: What are male farmers’ health beliefs and attitudes, and do they influence their concomitant behaviours and practices? The specific sub-questions that were utilised to answer the central question are as follows:

1. How do farmers perceive and define their health?
2. What are farmers’ beliefs and attitudes about their health?
3. Do they access health services? If not, why not?
4. Do they delay in accessing health services? If they do delay, why so?
5. What are the key factors that make farmers a ‘hard to reach’ group and what strategies can be used to overcome these factors?
6. Do wider issues influence farmers’ health and/or their health beliefs and attitudes?
7. What are healthcare professionals’ insights of male farmers’ health beliefs attitudes and practices in rural Kerry?
3.4 Research design: A mixed methods sequential explanatory design

The research design involved two interactive phases: A quasi-quantitative phase (numerical data) and a qualitative phase (narrative data). The combined methods of quasi-quantitative and qualitative enquiry implicit within this design provided a strategy to address both breadth and depth in one single study (Creswell and Plano Clark, 2010).

The research design can be summarised as follows. The first phase took a quasi-quantitative approach to primary data collection at the livestock marts to gauge 147 male farmers about their health beliefs, attitudes and practices. The study chose this approach because it was deemed a more practical approach to engage a 'hard to reach' group, in a challenging environment. While, a number of measurements could have been utilised, it was identified in the early stages of the research strategy that lengthy surveys were impractical, unfeasible and unappealing to male farmers, who were busy selling livestock and were under specific time constraints to return to their farm work. In this sense, rather than have little or no respondents take part in a lengthy time consuming survey, the study chose a quasi-quantitative approach to data collection. In this respect, quantitative data collected in this phase was predominately descriptive. Yet, it was equally important information that was required about male farmers' health beliefs, attitudes and practices.

Findings generated from the first phase of the study guided the line of enquiry for the second qualitative phase of the study. In this sense, the qualitative phase of the study relied on the quantitative findings. Equally, any quantitative findings that were considered broad and required further exploration were included in the interview schedule in the second qualitative phase of the study. In this phase, semi-structured interviews with eleven experienced healthcare professionals were utilised to gain their insight into male farmers' health beliefs, attitudes and practices, and equally to understand their conceptualisations of male farmers as a 'hard to reach' group. Since the qualitative data was influenced by the quantitative findings, this research design allowed for triangulation of data. In this respect, this methodological approach significantly strengthened the validity and reliability of the study (Creswell and Plano Clark, 2010). Figure 2 demonstrates the sequential research design employed this study.
In this regard, the study was 'truly' a mixed methods study, rather than just the use of two methods in one study (Bryman, 2006).

3.5 Research methodology
The following section describes the research methods employed in both the quantitative and qualitative phases of the study. It discusses the development of the data collection tools for both phases and Table 1 provides an overview of the research design applied in this study.
### Table 1 Research design of the study

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Sequential explanatory mixed methods</td>
<td>Quantitative - guided enquiry of qualitative phase.</td>
</tr>
<tr>
<td><strong>Setting</strong></td>
<td>Three different livestock marts in County Kerry, Ireland.</td>
<td>Participants chose interviews to be conducted in their work setting, n=9 and college setting, n=2 private room</td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
<td>Surveys</td>
<td>Interview schedule influenced by findings of phase 1</td>
</tr>
<tr>
<td><strong>Data type</strong></td>
<td>Numerical, Likert and two open-ended questions, (question 11 and question 16)</td>
<td>Interviews audiotaped</td>
</tr>
<tr>
<td></td>
<td>Administered face to face by researcher</td>
<td>Face to face semi-structured interviews (8-25 minutes)</td>
</tr>
<tr>
<td><strong>Analysis</strong></td>
<td>Descriptive and Analytical SPSS and Braun and Clarke 2006 (open-ended question)</td>
<td>Braun and Clarke 2006 – Thematic Analysis</td>
</tr>
</tbody>
</table>

3.5.1 Surveys

In the first quantitative phase of the study, structured interviews were utilised to examine male farmers' health beliefs, attitudes and practices, because a survey design had the ability to gather descriptive data from a large number of respondents in a timely manner (Kelley, et al., 2003). However, there was no existing validated scale that was applicable to the study's aims and objectives. In this sense, a survey was developed between the months of September 2015 to January 2016, specifically for male farmers in County Kerry and is attached as Appendix C. It was informed by (i) a broad and comprehensive review of existing literature, (ii) several farm placements and (iii)
visiting farmers with a public health nurse in rural Kerry. In this respect, the survey aimed to examine male farmers’ health beliefs, attitudes and practices from a SDOH perspective, and to capture, in one study, the complexity and influence of some of the wider determinants of health embedded in male farmers’ beliefs, attitudes and practices (Caddick, et al., 2016).

Dr Deborah Reed, an international expert in farmers’ health in the United States, was consulted on the study, and she gave permission to utilise any of her surveys, attached as Appendix D. Her surveys were quite lengthy, and many were postal questionnaires. In this regard, rather than include multiple appendices, a sample of questions from each of the surveys that influenced this study’s survey are included as Appendix E. Dr Reed’s work influenced many elements of this study’s survey design inclusive of (i) definition of health, (ii) self-rated health, (iii) personal satisfaction from farming (iv) percentage of household income from farming, (v) delays in help seeking (vi) relationship status, (vii) challenges in farming (viii) help on the farm and finally, (ix) farm succession. In this respect, Dr Reeds work and her surveys significantly contributed to the study’s survey design.

The final survey consisted of 16 questions that were divided into three main sections (i) demographics, (ii) beliefs/attitudes and finally (iii) attitudes and beliefs towards health practices. A funnel format was used in the survey to move from general to more specific and potentially more personal and sensitive questions (Sarantakos, 2005). The first section of the survey related to demographic details of the participants. This set of questions was to establish a general picture of farmers and their farms, and to settle participants into the study. The second section of the survey used a five-point Likert scale ranging from 1 strongly agree to 5 strongly disagree, to examine if the main challenges farmers experienced within the existing literature were applicable to male farmers in Kerry. In this sense, it sought to examine the influence of wider determinants

many of the items on the survey, it was the field research that highlighted that many questions were culturally inappropriate.
of health on male farmers’ health beliefs, attitudes and practices. The latter part of this section asked (i) self-rated health questions (ii) examined the participants use of the health services, determined (iii) how many delayed seeking help, and (c) investigated the potential reasons male farmers delayed or never accessed the health services. In the third and final section of the survey, participants health beliefs and attitudes towards their health practices was examined using a five-point Likert scale to assess participants attitudes and perceptions towards their health practices. In this sense, the study never sought to examine their actual health practices. For example, the study never sought to measure farmers exercise levels or physical fitness levels, but rather aimed to explore their attitudes and beliefs towards exercise and what they perceived as exercise.

3.5.2 Semi-structured interviews
The second phase of study utilised semi-structured interviews with eleven healthcare professionals, from a variety of disciplines\textsuperscript{40}, working within the primary care setting in Kerry between June and July of 2016. The main aim of the interviews was to explore participants insights of male farmers beliefs, attitudes and practices, and to determine their conceptualisations of male farmers as a ‘hard to reach’ group. In this sense, the second phase of the study sought depth on the broader quantitative findings, and the nature of qualitative research permitted participants to explore their experiences with male farmers. The semi-structured interviews were guided by an interview schedule and is included as Appendix F. This was a set of six questions that had been informed by both existing literature, as well as the quantitative findings that had warranted further exploration. The interview schedule commenced with the participants providing a summary of their professional background. This strategy was utilised to ease participants into conversations on a familiar topic and to initiate rapport (Edwards and Holland, 2013). It then proceeded to explore their insights into male farmers’ beliefs, attitudes and practices towards their health. It was followed by exploring their perceptions of male farmers’ usage of the health services, and explored how male farmers could be enticed to engage in the health services. The aim of these questions was to determine their level of understanding and knowledge about male farmers. In

\textsuperscript{40} Disciplines included general (n=6) and mental health nurses (n=1), a pharmacist, a GP, a physiotherapist and a dietician.
this respect, the interview schedule provided some structure to the interview process. Yet, it must be noted that few of the interviews followed such a linear and rigid process, nor were they intended to.

3.6 Research setting, sample and recruitment procedures
The research took place in County Kerry in the Republic of Ireland between the months of January to July in 2016. The research setting included three livestock marts, healthcare professionals work settings and the Institute of Technology, Tralee. Since farmers were the topic of interest in the study, the primary research took place at livestock marts, because this was a venue which many farmers attended regularly. In this sense, it was far more feasible, viable, and practical to reach farmers at the livestock marts, than it was to attempt to reach them in their own homes and farms. The livestock marts were also chosen to provide a representative sample of male farmers from three different regions in Kerry. However, despite efforts to obtain a representative sample, sheep farmers and, in particular, tillage farmers were not represented, mainly due to the lack of a sampling frame. Yet, it must be noted that 20.4% of farmers described themselves as 'mixed farmers' and so sheep farmers\(^{41}\) were included to some degree in the sampling range.

3.6.1 Male farmers
Minimal eligibility was sought to partake in the study and the inclusion criteria required that participants be:

- Over eighteen years of age
- Male
- A farmer that owns and works on his own farm located in County Kerry
- Living in Kerry (although not necessarily living on the farm)
- Able to give informed consent

\(^{41}\) As self-identified by the farmers.
The sample included both full and part-time farmers, because to differentiate between farmers based on full or part-time status was considered too simplistic. Since many full time farmers also worked off the farm (Hennessy and Moran, 2016) to supplement farm incomes (Shortall, 2014). As an alternative, farmers were asked for the percentage of their income that came from farm employment. This data provided more information in terms of the scale of off-farm employment and identified the level of reliance on supplementary income. However, since there was much diversity among male farmers and they were not a homogenous sample, future research would benefit from a set of parameters to examine specific subsets of the farming population.

The study aspired to a sample size of 152 based on a Chi-square test of association that had the following input parameters:

i. Effect size $w = 0.3$ (medium effect size)

ii. $\alpha$ error prob = 0.05

iii. Power $(1 - \beta$ error prob) = 0.80

iv. Degrees of freedom = 6

Figure 3 Visual representation of the formula to calculate sample size
The study achieved an eventual sample size of 164 farmers in three different livestock marts in East Kerry (Livestock Mart 1, n = 27), Mid Kerry (Livestock Mart 2, n = 97) and North Kerry (Livestock Mart 3, n = 40). However, after a screening exercise, as discussed in Section 4.2.5.1, the sample size was finalised at 147 and Figure 3 presents a visual representation of the formula to calculate sample size.

3.6.2 Healthcare professionals
Healthcare professionals were purposely chosen based on their discipline and on their experience of engaging with male farmers in the community setting in County Kerry. The rationale for utilising this approach was to ensure that the appropriate healthcare professionals were included in the study (Silverman, 2005). For instance, the sample required the nursing profession represented the core of the sampling range, and the sub sample was to consist of multiple disciplines. The sampling criteria was as follows:

Criteria

- To have engaged with male farmers in their specified profession over the duration of their career in the community setting
- To be an experienced healthcare professional > 10 years of professional experience
- To be working in Kerry
- To be working in primary healthcare – community based settings
- To have the core sample from the nursing profession with an equal number of psychiatric (Community Mental Health Nurse (CMHNs), and General Nurses (Public Health Nurses (PHNs) / Community Registered General Nurses CRGNs)
- To have a sub-sample, that consisted of a dietician, a physiotherapist, a pharmacist and 3 GPs

The actual sample included seven nurses, inclusive of a CMHN, an Assistant Director of Nursing (ADON), a Nurse Manager in the community, and the remainder were community nurses and PHNs that worked in the community in Kerry. The nursing
profession was chosen to represent the core discipline within the sampling range, because nurses engaged with many individuals within the primary care setting, and they liaised with all other members of the multi-disciplinary team. Other professions were included in the sample to facilitate diverse perspectives from a wide range of disciplines and expertise, in order to provide a holistic understanding of healthcare professionals experiences of engaging with male farmers. Of the eleven participants, there were eight females and three males. Since the nursing profession is female dominated (Meadus, 2000), it was not surprising that more females took part in the study. However, it was a positive aspect that three males from the community setting took part in the study. Table 2 summarises the professions of the eleven healthcare participants who took part in the study. To ensure the anonymity of the participants their professions are coded in this study. They are identifiable only by number and are referred to in this research as participant 1-11.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Nurses</td>
<td>6</td>
</tr>
<tr>
<td>Community Mental Health Nurse</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>1</td>
</tr>
<tr>
<td>Dietician</td>
<td>1</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>1</td>
</tr>
<tr>
<td>General Practitioner</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2 Healthcare professionals' details

The participants chose the place, date and time to conduct the semi-structured interviews. Nine of the participants were interviewed in their work environment, and the remaining two chose to conduct the interview at the Institute of Technology, Tralee. All semi-structured interviews were conducted in a private room and audio recorded. Data collection was deemed complete when saturation of data had been achieved and no new data was emerging from the interview process (Braun and Clarke, 2006). The researcher exhausted all attempts at increasing the numbers of GPs and community mental health nurses to participate in the study. However, only one GP agreed to participate and one community mental health nurse. In this regard, attempts to recruit members of these professions continued throughout the summer of 2016 and, after
great effort, it was decided to accept there would be an under representation of expertise within the sample range, particularly of mental health nurses. Despite the fact, the researcher sought to have an equal representation of both general and mental health nurses. The researcher’s recollection of failed attempts to recruit mental health nurses is included as Appendix G.

3.6.3 Time location sampling
Since men and male farmers have been referred to as ‘hard to reach’ or ‘challenging’ groups (Carroll, Kirwan and Lambe, 2014, p. 8; Van Doorn, Richardson and Osborne, 2014, p. 9). This study sought to utilise a sampling technique that would maximise the sample size and sampling range of male farmers in rural Kerry. In this respect, the study employed Time Location Sampling (TLS) also known as space or venue sampling, to recruit members of ‘hard to reach’ populations in non-traditional settings (Semaan, 2010; Shaghaghi, Bhopal and Skeikh, 2011).

TLS is the first method of choice to recruit members of a target population where they congregate, and it can effectively engage participants in the research at specific times in set venues (Semaan, 2010). Since farmers attended the livestock marts at specific dates and times, TLS was chosen as the most suitable sampling strategy to recruit male farmers in this study. The first phase of TLS required the researcher to map out venues and establishments where individuals from these groups congregate. This mapping generates a sampling frame of venues, dates and times or VDTs (venue-date-time), informing the researcher when recruitment of the target group is possible. It is a probabilistic type of random sampling method, and has less bias than participants that are chosen by the more commonly used snowball or convenience sampling (Bryman, 2004; Ellard-Gray, et al., 2015; Woodley and Lockard, 2016). However, since no sampling frame existed for male farmers in rural Kerry, male farmers were not identifiable prior to the study. In this sense, participants were randomly approached at the livestock marts. In light of this, future researchers could develop a sampling frame of male farmers by utilising TLS. Once the sampling frame was established it could provide a replicable method of sample selection with a systematic procedure (Marpsat and Razafindratsima, 2010). In this respect, TLS can provide the precise instructions for field
staff on where, when and how to select participants to interview (Magnani, et al., 2005). However, valid limitations of TLS include (i) an under-representation of members of the target group who do not attend the venue, such as isolated people (Magnani, et al., 2005), and (ii) a biased sample, if the researcher failed to gain access to the venues where the research was to take place (Semaan, 2010).

In the context of this study, it was very important to identify when the livestock marts were busy in order to maximise the sampling range of the farming population (Semaan, 2010). TLS was useful in this regard, because it was utilised to identify when there was good attendance at the livestock marts. It was vital that the months chosen to conduct the study did not conflict with busy seasons for farmers, such as spring lambing and the summer season. During these months, farmers were very busy on their own farms, and attendance at the livestock marts was quite low. In light of this, data collection took place during January and February of 2016 to coincide with the busier trading activity during these months. However, the harsh climate at that time of year did not lend itself to effortless interviews, but it was a busy time at the livestock marts with hundreds of farmers in attendance. As a result, in February 2016 a total of n=147 participants (farmers) took part in the study, over a two-week period at the livestock marts. In this regard, utilising the livestock mart as the research setting and TLS as the sampling strategy were deemed successful in maximising the sampling range and participation rate of rural farmers in the study.

3.6.3.1 Access to sites
On receipt of ethical approval, gatekeepers were approached to obtain permission to recruit participants. In the first phase of the study, the livestock marts were accessed with the approval of the mart managers, and the support of the local IFA, gave the research local legitimacy (Dibartolo and McCrone, 2003). The researcher and the supervisors of the research study also provided information on the project in a radio interview on Kerry Radio's 'Agritime' two weeks before the research commenced at the livestock marts to encourage participation in the study. Prior to the commencing the surveys, each farmer was offered written information before they agreed to take part in the study. Since, a written letter of invitation was not received well in advance of the
study, it may be regarded as a limitation. Yet, it was not feasible, practical or desirable to send out written letters of invitation to every potential male farmer in Kerry. However, farmers' best interests were safeguarded at all times during the research process and is discussed in Section 3.10. In this respect, they were well informed before they agreed to consent to take part in the study, and the Participant Information Leaflet (PIL) is included as Appendix H and the consent form is attached as Appendix I.

In regards to the recruitment process of the healthcare professionals, the Director of Public Health was contacted within the HSE, and PHNs with >10 years of experience in public health, and who had also cared for male farmers within the community setting agreed to participate in the qualitative phase of the study. The researcher contacted the other disciplines that were chosen to take part in the study by telephone, and all eligible individuals were invited by post or email to participate in the study. The invitation included a PIL to inform healthcare professionals about the study and included all relevant details that were required to make an informed decision and is attached as Appendix J. The consent form was also attached to the document so that they could agree to participate prior to data collection and is included as Appendix K. Participants had the right to withdraw from the interview at any phase. Those that agreed to take part in the study made contact with the researcher, and they were purposely selected based on their discipline and their experience of engaging with male farmers in Kerry.

3.7 Data collection procedures
The research design utilised in this study took a number of months to plan. The following section describes the steps taken to prepare for data collection in accordance with the mixed methods sequential design used in this study. It outlines the two pilot studies undertaken prior to quantitative data collection and the strategies that were utilised to recruit male farmers at the livestock marts during quantitative data collection. It then proceeds to describe the qualitative data collection and makes explicit the strategies taken to ensure integration of both research methods were congruent with the sequential design of the study.
3.7.1 Pilot studies at the livestock marts

In the first phase of the study, prior to data collection, two pilot studies were conducted, and a sample of the pilot studies that were utilised is included as Appendix L. As discussed earlier in the chapter, the survey was not an existing validated scales. In this sense, two pilot studies were among the measures taken to validate the survey. The first pilot survey was pre-tested with participants (n=15) in January 2016 at a livestock mart in County Kerry. The site was approximately seventy-six kilometres from the livestock marts where the full study was conducted. This strategy was employed to reduce the likelihood of exposing the survey to the potential participants of the full survey.

In the first pilot study, farmers struggled to provide their exact age. For instance, they appeared uncomfortable, confused and tried to ‘add up’ their exact age. In this sense, farmers tended to ignore the categories and instead, for example they replied, ‘I’m nearly forty, I’m in my early fifties, or I’m the best part of sixty’. The survey had to stop and start in regards to the level of distraction this question caused them, and it interfered with the flow of the survey. It was also time consuming to seek clarification from most of the participants on their actual age. Therefore, after the first pilot study, the age categories were changed to reflect how farmers had responded to the question. In this regard, the revised question asked them if they were in their twenties, thirties and so on. In this respect, the question reflected the quasi-quantitative approach of the study, because although the age groups were less ‘quantifiable’, it was deemed more culturally appropriate to this study.

The researcher was an outsider to the farming community. In this regard, to encourage rapport with farmers and portray a shared understanding of their culture, the survey questions adopted terminology reflected in the literature. Yet, paradoxically, the use of such terminology actually produced the opposite effect, and created an unease among farmers. For example, farmers were asked to answer statements such as ‘I would only go to the doctor if I was on my last leg’. As an outsider, using their terminology, or what some of the literature depicted as their terminology, diverted farmers from the survey, because they found it was amusing. In this respect, it undermined the survey’s credibility, and hence, was removed from the survey after the first pilot. In this regard,
removal of this type of terminology improved the quality and effectiveness of the survey (Shedlin, et al., 2011; Ellard-Gray, et al., 2015).

The pilot test also showed that farmers appeared uncomfortable with the questions that had been asked near the beginning of the survey, such as those pertaining to their use of the health services, questions about their attitudes and beliefs towards their health practices, and questions that related to mental health. The questions that related to their use of the health services were revised and constructed into a matrix-type question. These questions reflected the existing literature that related to men's delay in utilising health services (Andrology Australia, 2014). The matrix was developed to maximise the level of the participants' responses and as a practical and useful strategy to gather rich data in a short time frame.

Questions that related to farmers mental health were removed, because the response rate was so low. The literature had indicated that men can feel uncomfortable answering these type of questions (O'Brien, Hunt and Hart, 2005; Emslie, et al., 2007; Alston and Kent, 2008; Hoy, 2012). In addition, the researcher acknowledged mental health questions may not of been suitable to this type of enquiry (face to face surveys), because they are brief (3-5 mins) and do not allow time to build the rapport that is required for participants to open up on a topic perceived as sensitive (Sydor, 2013). As a result, the question was removed and the study identified that interviews would be more suitable to explore this line of enquiry with farmers. After the pilot the mental health component of the survey decided to focus on the issues raised both in literature and farm placements in relation to stress related farm challenges and a five-point Likert type question asked farmers about causes of stress in farming included as Table 7. As a result, the study was indirectly assessing mental health, because the literature found that men can use stress as a euphemism for many other mental health issues, because they were more comfortable expressing mental health issues as stress (O'Brien, Hunt and Hart, 2005; Kilmartin, 2005; Emslie, et al., 2007; Alston and Kent, 2008; Hoy, 2012). However, the study does not claim that stress equated to farmers having undiagnosed mental health issues, but argued that men appeared more comfortable using the term 'stress'.
The study equally does not claim that the survey measured stress, rather it utilised dominant discourse that emerged during the review of the literature, to examine if the same challenges caused stress among male farmers in Kerry.

In February 2016, a second pilot test was conducted with n=7, male farmers to assess the revised survey in the same livestock mart that the first study was piloted. The interviews flowed with more ease and the level of engagement between the researcher and the participants significantly improved. After the second pilot study, the survey required only minor amendments. The major advantage of conducting the pilot studies was that they provided the researcher with more knowledge about male farmers. It equally provided invaluable insight into male farmers' reactions to the survey, and allowed the researcher time to reflect and practice delivering the survey, before the full data collection phase. It also alerted the researcher to pay attention to how farmers occupied space, the makeup of the physical environment and the potential challenges the study would present. Respect for participants' time was an important part of the research process and the revisions prevented the survey from becoming too lengthy. In this respect, the survey halved in length and reduced in time from > 10 minutes to 3-5 minutes. The survey was more concise and efficient and allowed the interview to flow easily into conversation. Table 5 summarises the steps taken to maximise this project's rigour, and it was adapted from Lincoln and Guba, 1985. In conclusion, the pilot studies had a very influential impact on the effectiveness of the overall survey design and ultimately the participation rate (Semaan, 2010).

3.7.2 Limitations of the survey
In quantitative research, validity is defined as the extent to which a concept is accurately measured (Heale and Twycross, 2015, p. 66), and the reliability of a survey relates to its ability to yield the same data when it is re-administered under the same conditions (Polit and Beck, 2010). As discussed earlier in the chapter, this study employed a quasi-quantitative approach to quantitative data collection. In this respect, the study sought to gauge farmers in their health beliefs, attitudes and practices through the use of primarily descriptive statistics that were informed by large-scale studies by Dr Deborah
Reed, an international expert on farmers' health in the United States, a comprehensive review of the existing literature and farm placements.

Face and content validity of the survey was tested with peers, family, academics and supervisors of the study. It was piloted twice to ensure that the questions that were tested appeared relevant and clear (Parahoo, 2006). However, despite attempts to safeguard the validity and reliability of the survey, it did not benefit from the advantages of an existing validated scale. Yet, it must equally be pointed out that it was not the intent or within the scope of this study to develop a validated tool for future use. Rather, the survey was used as a means to gauge male farmers, in primarily descriptive data in regards to their health beliefs, attitudes and practices. In this sense, it was developed specifically for male farmers in Kerry and was precluded from any generalisations to the farming population as a whole. In this respect, the survey was not intended to measure, generalise or seek validation of the survey as a tool for future use. Therefore, the validity and reliability measures that would be typically sought to validate a tool were inapplicable to this survey. However, the study did choose to include one item that sought to measure the *causes of stress* in farming and this was an analytical statistic that was validated, since it aimed to measure a concept. In this instance, items in question seven, measured *causes of stress* in farming, were assessed for internal reliability, and an acceptable inter-item correlation of .321 provided internal reliability to this question.

In regards to the validity of the survey, there were limitations that need to be acknowledged. Firstly, since existing literature found men were disinterested in their health (DoH, 2016), question 15 sought to establish how often male farmers thought about their health in relation to everyday lifestyle practices. For instance, Long and Mongan (2014) found individuals that thought about their health usually had healthier lifestyle practices. However, the researcher acknowledged that this question may seem ambiguous on paper, and hence, it may regarded as a limitation of the survey. However, in reality the question was clearly articulated in verbal conversations with participants in both pilot studies and the full study. In this sense, this question aimed to assess their perceptions and their attitudes towards their health practices.
In addition, during data collection the researcher found that the option of N/A was missing from question 15 (a) on the survey. However, since the researcher administered the surveys, the issue was easily addressed during data collection and N/A was added to surveys to reflect participants who self-reported as non-drinkers. In this sense, it was not a limitation per se. In comparison to self-administered or postal surveys, the administration of the surveys by the researcher had the following advantages: (a) it allowed for a higher response rate, (b) it increased accuracy, because the researcher ensured all participants understood all the questions before they answered them, and the researcher was consistent in articulating the questions with the participants, (c) it ensured that there was no missed data by error, and any unanswered questions were only when the participant declined to answer the question, and lastly, (d) if any other issues arose during data collection, the researcher was able to detect, address and rectify any problem within the survey while on the field.

Secondly, since farmers were allowed to self-report the size of their farm in terms of small, medium or large, this somewhat limits the survey in terms of objective comparisons with other agencies and studies. However, the review of the literature and the farm placements had identified that farmers were 'private people', and did not like to tell others their personal business, particularly a stranger. In this sense, when farmers were asked about the land they owned, the majority of their responses were never straightforward. Many of them referred to the size of the farm in relation to small, medium or large. Other farmers attempted to explain the land they owned, and the land they rented, and others explained different variations of the same. In this respect, farmers appeared uncomfortable in answering the size of their farm in exact measurements, and were unable to respond with a direct answer on many occasions. In this light, it was important to the researcher to respect farmers and not pursue questions they perceived as invasive and culturally inappropriate. In conclusion, the study never sought to use lengthy measurements to assess farmers' health status or health practices, because they were unable to meet the aims and objectives of the study. Nor did it attempt to develop a validated tool for future use. Rather, it aimed to deliver a short survey that had the potential to gauge a 'hard to reach' group in a significantly under researched area, in a challenging environment within a 3 to 5 minute time frame.
3.7.3 Methodological challenges at the livestock mart
Livestock marts as research sites presented a range of environmental and methodological challenges. The research surveys were conducted in very noisy, wet, and chaotic environments, with livestock and bidding taking place in the background. Large numbers of farmers arrived and left the livestock mart at around the same time. In this respect, after the pilot studies, the researcher was aware that a specific recruitment strategy was required to address the challenges the livestock marts posed to the study. During the pilot studies a lack of farmers’ time was one of the key issues identified as a potential methodological challenge. In this respect, the researcher had to plan a strategy to maximise the response rate, while at the same time ensure there was a respect for farmers’ time. In this sense, the researcher, in accordance with the recruitment techniques of TLS, used ethnographically mapping to examine the physical make-up of the livestock marts to determine the ways in which farmers’ occupied space at the marts (Magnani, et al., 2005). Farmers were found to occupy most space at the ring, where the trading goes on, and the canteen. Although these two places appeared to be the most opportunistic areas to approach farmers to take part in the study, they were in fact, the most inappropriate areas, because in the ring farmers were preoccupied selling and buying livestock. While, in the canteen, they sat at large tables where it was considered inappropriate to ask participants about their health in the presence of other men, particularly since men tend to regard health as a personal and stigmatised topic to discuss (Sydor, 2013; Lefkowich, Richardson and Robertson, 2015). In this sense, it may have influenced inaccurate replies to the survey due to masculine discourse being played out (Oliffe and Mroz, 2005), and distorted the validity of the survey results. In addition, it was unethical to expect participants to answer the survey when confidentiality and anonymity could not be maintained due to the close proximity of other men sitting at the tables. In this regard, the researcher found to approach farmers in these spaces was a sign of disrespect and was referred to as ‘crossing boundaries’.

In this light, the next step in the sampling strategy was to identify areas where farmers were most approachable and receptive to engage in the study. The researcher referred to these areas as ‘intersection points’ and Table 3 provides an overview of the number of intersection points at each livestock mart. These areas included the entrance and exit...
points of the canteen, the ring, the office, the carpark and the back of the ring where the livestock are kept. For example, livestock mart 2 had several entries and exits to the ring. This allowed the researcher to navigate and engage with farmers in different spaces throughout the livestock mart, and recruit participants with far less effort than the livestock marts which had fewer intersection points such as livestock mart 1 and livestock mart 3. In this sense, the number of acceptable intersection points had a huge influence on the rate of farmers' participation in the research. Some livestock marts had higher attendance than others and the importance of these intersection points were recorded during data collection.

<table>
<thead>
<tr>
<th>Livestock mart Location</th>
<th>Intersection points</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock Mart 1</td>
<td>1</td>
<td>n=27</td>
</tr>
<tr>
<td>Livestock Mart 2 Day 1</td>
<td></td>
<td>n=52</td>
</tr>
<tr>
<td>Livestock Mart 2 Day 2</td>
<td>7</td>
<td>n=45</td>
</tr>
<tr>
<td>Livestock Mart 3</td>
<td>1</td>
<td>n=40</td>
</tr>
</tbody>
</table>

*Table 3 Significance of the intersection points*

3.7.3.1 Engaging with farmers

The study incorporated masculine discourse in both the theoretical and operational components of the research methodology. In this respect, the survey approached health in a non-direct manner (Pringle, McKenna and Zwolinsky, 2013; Lefkowich, Richardson and Robertson, 2015), and employed masculine interests such as farmers work environment as a strategy to 'draw' or 'hook' farmers to engage in the study (Hunt, et al., 2014, p. 9). Once farmers were asked about their work environment, there appeared to be a significant shift in the level of engagement. In this sense, by appealing to men's masculine selves, men regarded surveys as more useful and legitimate (Jacklin and Kinoshameg, 2008). On the other hand, although the 'hook' question was a sampling strategy employed to entice men to engage in the research. It was primarily developed to examine if the main challenges farmers experienced within the existing literature were applicable to male farmers in Kerry. In this sense, it sought to examine the
influence of wider determinants of health on male farmers' health beliefs, attitudes and practices.

3.7.4 Qualitative data collection
Semi-structured interviews were utilised in the second phase of the study. Qualitative data collection began once the quantitative data had been analysed to remain congruent to the study's research design. Eleven healthcare professionals from a diversity of disciplines took part in face to face interviews in either their work setting (n=9), or in a private room in the Institute of Technology, Tralee (n=2). Interviews were held at a time most suitable to the participants and were recorded with their permission. They varied in duration from 8-25 minutes and confidentiality and anonymity were upheld at all times. Each interview was transcribed verbatim and redacted, and all participants professions were coded in order to protect their identity (a sample of the interviews is included as Appendix M).

The interview schedule used to interview healthcare professionals was directly influenced by the survey findings. In this respect, this phase of the research process aimed to collect data that would provide insight and depth into both, the broader quantitative findings and participants conceptualisations of farmers as a 'hard to reach' group. In this regard, the aim of qualitative data was to make sense out of participants' experiences, in their own minds and in their own words (Cropley, 2002, p. 8). The interviews were semi-structured to allow some focus, flow and structure, while at the same time, participants were able to explore their experiences of engaging with male farmers. The use of semi-structured interviews elicited rich data that heightened and illuminated the findings from the first quantitative phase of the study.

3.8. Data analysis
The following section explains the analytical procedures employed in the study. It begins by describing the statistical tests employed to analyse the quantitative data from the research surveys. It then describes the theoretical framework used to thematically analyse the qualitative data, and makes explicit the steps taken to accomplish data
integration between both data sets. Finally, it outlines how the study achieved triangulation of data and contributed to the rigour of the study.

3.8.1 Quantitative data analysis
The survey data was analysed using Statistical Package for the Social Sciences (SPSS) (version 23). The data did not meet the statistical assumptions for parametric or regression analysis to be undertaken. In this sense, the study utilised non-parametric tests such as (i) Kruskal-Wallis H test with Pairwise Comparisons (ii) Mann-Whitney U Test (iii) the Probability of Superiority test, and the (iv) Chi Square Test for Association. The Kruskal-Wallis H test is a rank-based, non-parametric test that was used to determine if there were statistically significant differences between two or more groups of independent variables on a continuous or ordinal dependent variable (Laerd Statistics, 2016). This test was used to determine if there were differences between three or more categorical, independent groups. The Kruskal-Wallis H test was used differently depending on the distribution of the data being analysed. For example, it depended on the shape of the distributions of the groups of the independent variables. Boxplots (types of histograms) were used to visually inspect these distributions and determine if they had similarly shaped distributions. They were used to determine the overall effect of an independent variable on dependent variable, but it did not identify which of the groups differed from each other. In this respect, to discover where the differences lay, post-hoc tests were performed using Pairwise comparisons that used Dunn’s (1964) procedure with a Bonferroni correction for multiple comparisons. A Wilcoxon-Mann-Whitney test or more commonly referred to as a Mann-Whitney U test is a rank-based, non-parametric test. It was used to determine if there were differences between two groups on a continuous or ordinal dependent variable (Laerd Statistics, 2016). The distribution of variables were once again assessed by visual inspection of the boxplots. In addition to the Mann-Whitney U test, a probability of superiority test was performed and it predicted the probability that a randomly sampled score from one population was larger than a randomly sampled score from a second population (Laerd Statistics, 2016). Finally, frequencies were run on all descriptive data and the Chi square test for association was also conducted on categorical variables.
(between two nominal or dichotomous variables). The Chi square test for association was used to determine if there was an association between two categorical variables. All cell frequencies were > 5 and statistical significance was established at \( p < 0.05 \). In addition, using Cramer's V the magnitude of the associations was determined (Laerd Statistics, 2016). The application of these tests on the quantitative data and the statistical findings that arose from them are presented in Section 4.2.5.

3.8.2 Qualitative data analysis
The qualitative data was generated from the two open-ended questions in the research survey, and the semi-structured interviews with the healthcare professionals. Both sets of qualitative data were analysed using Braun and Clarke's (2006) framework of thematic analysis (TA). In regards to the two open-ended questions, TA was used to code the responses, and each code was double checked with the supervisors of the research project to ensure the codes fitted the data and captured their meaning. For example, some of the codes that developed from the qualitative responses in the survey included *Lifestyle-Exercise, Lifestyle -Smoking, Lifestyle – Drinking, Lifestyle – Exercise, Losing Weight, Stress – General, Stress – Money, Stress - Farming* (a scan of initial codes is attached as Appendix N).

The semi-structured interviews with the eleven healthcare professionals were audio-recorded and transcribed verbatim. The use of TA allowed for the meaningful identification and analysis of themes from the data (Braun and Clarke, 2006). A theme was something that captured something important about the data in relation to the research question and represented some level of meaning within the data set (Braun and Clarke, 2006). The framework consists of six phases: familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report. The process of this framework was applied to the analysis of the qualitative data and is illustrated in Table 4. Thematic analysis was performed through a process of reading and re-reading the data. The transcripts were read repeatedly until familiarisation of the data was achieved with each of the interview transcripts and the entire data set. An open coded approach was employed to gain an initial understanding of the data generated. The data was then coded (labelled) to
identify anything and everything of interest in answering the research question. All instances of text where each individual code appeared in the dataset were identified. The codes were grouped together and themes were developed. Each theme was linked to an underpinning code, then reviewed, and revised by coding and collecting more data from the original interview transcripts.

The data analysis was a recursive rather than a linear process, and the researcher constantly moved back and forth between the entire data set, and jotted down ideas and potential coding schemes (Braun and Clarke, 2006). The analysis was exhaustive in that all of the data was allocated to a theme/category. All the transcripts were re-read to ensure the themes fitted the data and at this stage a story began to emerge from the data. In this sense, there were no predefined codes or categories constructed for participant responses. Rather the data was grouped into categories that were determined by their meaning and relationship to the research question. In this respect, analysis was data driven and resulted in rich description that was free of the researcher's preconceptions (Braun and Clarke, 2006, p. 12).

<table>
<thead>
<tr>
<th>Stage</th>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>Familiarisation with the data</td>
<td>Transcribe the data, read and re-read the data; note down initial themes.</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Generating initial codes</td>
<td>Code interesting features of the data in a systematic fashion across the entire data set; collate data relevant to each code.</td>
</tr>
<tr>
<td>Stage 4</td>
<td>Searching for themes</td>
<td>Collate codes into potential themes; gather all data relevant to each potential theme.</td>
</tr>
<tr>
<td>Stage 5</td>
<td>Reviewing themes</td>
<td>Check if themes work in relation to coded extracts (level 1) and entire data set (level 2). Generate a thematic map of analysis.</td>
</tr>
<tr>
<td>Stage 6</td>
<td>Defining and naming themes</td>
<td>Ongoing analysis to refine the specifics of each theme, and the overall analysis the story tells; generate clear definitions and names for each theme.</td>
</tr>
<tr>
<td>Stage 7</td>
<td>Producing the report</td>
<td>Selection of compelling extract examples; final analysis of selected extracts. Related back to the analysis and to the research questions and literature. Producing a report of the analysis.</td>
</tr>
</tbody>
</table>

Table 4 Stages of thematic analysis cited in Braun and Clarke, 2006, p. 35
In conclusion, Braun and Clarke's (2006) framework was used to analyse the qualitative data in this study, because it was a more accessible form of analysis that did not require the same level of theoretical and technical ability as grounded theory did. In this sense, it was suitable to an early stage researcher, because it provided the core skills that were useful for conducting many other forms of analysis (Braun and Clarke, 2006). It was also not 'wed' to any theoretical framework and in this respect, was easily applied to a mixed methods study. However, one of the main criticisms from outside the field is that 'anything goes' (p. 26) with thematic analysis. Critics question the reliability of TA, because they claim a wide variety of interpretations can arise from the themes (Holloway and Todres, 2003). Yet, Braun and Clarke (2006) argue that this qualitative approach is subjected to the same criteria as quantitative approaches and is a rigorous method of analysis. The application of such rigour was evident in this study as both sets of qualitative data were accurately transcribed and member checked by the two supervisors of the research study. In this sense, three individuals independently validated the codes and themes that emerged and the study provided a detailed account of steps taken to analyse the qualitative data. In this respect, this also added to the validity of the qualitative data (Braun and Clarke, 2006, p. 23).

3.9 Study rigour
Rigor is the ability of the researcher to prove the steps they took to ensure the validity of the research findings (Heale and Twycross, 2015). In this mixed methods study, rigor was an integral part of the research process. Table 5 provides an overview of the steps taken to achieve rigor in both quantitative and qualitative approaches, and equally, includes self-acknowledgement of the limitations of the study as part of the research process. In this study, the decisions taken were made explicit and transparent throughout this thesis. The researcher's positionality and engagement in reflexivity was acknowledged at the outset of the research process, and a reflective diary was kept throughout data collection phases of the study. The survey was piloted twice and took several months to prepare. It was informed by surveys from an international expert in farmers' health, an extensive review of the literature and by spending time in the community with farmers during farm placements. Both qualitative data sets were accurately transcribed and member checked by the two supervisors of the study. The
qualitative data was transcribed per verbatim to ensure the voices of the participants were theirs and not the researcher's interpretation.

Additionally, the key to methodological rigor in mixed methods research is the process of 'mixing' the quantitative and qualitative components within a study (Halcomb and Hickman, 2015). In this study, this was achieved as follows; the findings of the first quantitative phase of the study that were considered broad, and that warranted further insight, were used to steer and direct the interview schedule for the second qualitative phase. This was the point of data integration between both phases of the study and is included as Appendix 0. In this sense, the study was 'truly' a mixed methods study, rather than just the use of two methods in a single study (Bryman, 2006), and this methodological process strengthened the validity of the study's findings (Creswell and Plano Clark, 2010). For example, rigor was evident in this mixed methods research, because the study's findings achieved (i) triangulation of data, (ii) corroboration of data, (iii) elaboration and clarification of data, (iv) the ability to compare and contrast data to uncover paradoxes and contradictions (v) the use of both breadth and depth to expand the study, and to understand multiple perspectives of the research problem (Bryman, 2006; Halcomb and Hickman, 2015). In this respect, a mixed methods approach provided both breadth and depth in one single study, which would have been impossible with the use of either quantitative or qualitative data alone (Halcomb and Hickman, 2015).
3.10 Ethical considerations
During the research process the principles of research ethics applied equally to all participants; both farmers and healthcare professionals. The study followed the main principles of research ethics and protected participants best interests at all times. In this sense, the researcher ensured confidentiality was maintained, that there was no deception, and that no harm came to any participant during the research process (WHO, 2011). Maintaining confidentiality was paramount to the integrity of the study and great care was taken in this regard (Wiles, et al., 2008). All data was confidential, there were no names attached to the surveys conducted with farmers, and completed surveys were stored in a separate folder to consent forms. In regards to the healthcare professionals, all participants were coded and identifiers (professions) were removed to ensure anonymity. The potential benefits and harms of research were explained to both groups,
though this research did not involve any foreseeable risks. The researcher’s details and a list of local support services were made available. Although the benefits of this research were tangible for both groups, no promises about the benefits or outcomes of the research were made. However, it was hoped that the research would be useful. In regards to avoidance of deception, the researcher operated with scientific integrity, and was honest and transparent throughout the study.

Ethical approval was granted for this study from the Research Committee at the Institute of Technology, Tralee. All participants that took part in the study received a detailed PIL that outlined their role in the project included as appendices H and J. The PIL’s provided all the information pertinent to the study and the letters were both clear and coherent. This was to ensure that all participants easily understood what was involved in taking part in the study. Each participant also had the researcher’s contact details should they have required further information.

3.11 Chapter conclusion
To conclude, the research approach and the procedures employed throughout the research process have been made explicit in this chapter. The steps employed were consistent with the study’s aims and objectives, and the limitations of the study were self-acknowledged as a part of the process of research rigour. Yet, regardless of these limitations, the study also made several contributions to the existing literature.
Chapter 4: Findings

4.1 Introduction
This chapter presents the quantitative and qualitative research findings separately and in the same sequence in which they were collected and analysed, in order to remain consistent with the mixed methods sequential explanatory design of the study. In this respect, section one provides an overview of the primary quantitative findings gathered from male farmers at the livestock marts in Kerry. The second section of the chapter presents the qualitative data garnered from semi-structured interviews with a variety of healthcare professionals that worked in the primary healthcare setting in Kerry. The qualitative data is presented under two main themes (i) challenges to current service provision in regards to the system itself and in relation to farmers themselves, and the second main theme relates to participants perceptions of male farmers (ii) lack of ownership of their health.

Section I
4.2 Quantitative findings
The first section outlines the results of the quantitative phase of the study and presents the data in accordance with the structure of the survey. Table 6 provides an overview of the demographic characteristics of farmers that participated in the study. It then continues to present the rest of the quantitative data collected including the two open-ended questions that were contained within the survey. As this section progresses, it presents the procedures taken to statistically analyse the causes of stress in farming and it demonstrates statistically significant findings in relation to this question. Finally, the first section of this chapter closes by presenting an unexpected non-statistically significant finding in relation to the study.
4.2.1 Demographic data

Table 6 illustrates the results of the demographic data that was collected from the survey.

<table>
<thead>
<tr>
<th>Item</th>
<th>Results</th>
<th>Item</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Participants</td>
<td>Livestock Mart 1</td>
<td>Average age</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Livestock Mart 2</td>
<td>≤ 60</td>
<td>64.6%</td>
</tr>
<tr>
<td></td>
<td>Livestock Mart 3</td>
<td>≥ 60</td>
<td>35.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 30</td>
<td>16.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 20</td>
<td>4.8%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Farming</td>
<td>Dairy</td>
<td>Living Arrangements</td>
<td>Partner</td>
</tr>
<tr>
<td></td>
<td>Beef</td>
<td></td>
<td>63.9%</td>
</tr>
<tr>
<td></td>
<td>Suckling</td>
<td></td>
<td>17.7%</td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td></td>
<td>12.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.1%</td>
</tr>
<tr>
<td>Size of Farm</td>
<td>Small</td>
<td>Farm Income as a % of Total Income</td>
<td>25% and below</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td></td>
<td>Between 25% - 75%</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td></td>
<td>75% and above</td>
</tr>
<tr>
<td>Type of Land</td>
<td>Good/Mixed</td>
<td>Farm Succession</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

Table 6 Male farmers’ demographic data

4.2.2 Stress related challenges in farming

Question seven utilised a five-point Likert scale to measure specific factors that caused farmers stress. Table 7 provides a summary of the combined responses (strongly agree and agree) to question seven, items a-g.

<table>
<thead>
<tr>
<th>Q.7</th>
<th>Do any of these cause the farmer stress</th>
<th>Strongly Agree/Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Unstable income</td>
<td></td>
<td>85.7% n=126</td>
</tr>
<tr>
<td>b. Pressure to expand</td>
<td></td>
<td>62.6% n=92</td>
</tr>
<tr>
<td>c. Loss of control</td>
<td></td>
<td>92.5% n=136</td>
</tr>
<tr>
<td>d. Lack of respect</td>
<td></td>
<td>87% n=128</td>
</tr>
<tr>
<td>e. Working alone</td>
<td></td>
<td>76.9% n=113</td>
</tr>
<tr>
<td>f. A lot of paperwork</td>
<td></td>
<td>84.4% n=124</td>
</tr>
<tr>
<td>g. Loss of farming community</td>
<td></td>
<td>84.4% n=124</td>
</tr>
</tbody>
</table>

Table 7 Summary of male farmers’ responses to causes of stress in farming

In the survey, participants appeared more at ease speaking about the ‘stress’ they experienced in their daily lives as farmers, rather than speaking about mental health issues. For example, only two participants spoke openly about their struggles with depression. One of these participants divulged that for many years he hid the fact that he had depression, and the other said he had depression for years before he knew what
it was. In this respect, the study sought to examine if the specific factors highlighted in both existing literature and on farm placements caused farmers in Kerry stress.

The next question on the survey was highlighted in the literature review. Studies have shown that older farmers believed they had to continue to run the farm long past their ability to do so, because they had failed to secure a farm successor, and their beliefs subsequently influenced their health and wellbeing (Shortall, 2014; Leonard, et al., 2017). In this respect, it was included as question eight in the survey to assess if farmers in Kerry perceived themselves as experiencing a similar situation. The findings from this study indicated that nearly one third (33.3%) of participants had no one to rely on to run the farm and they equally had no successor secured to take over the farm. Farmers were divided on the next question as nearly half (49.7%) believed farmers were healthier now than in the past and nearly half (46.9%) reported they were healthier in the past than now. This question was asked to merely gauge farmers’ perceptions of the health of the farming community in Kerry over the last few decades, since generational differences were identified in farmers’ health over the last three decades in Ireland (Smyth, et al., 2012).

4.2.3 Accessing services – beliefs and practices
A matrix type question was developed to gather information on participants who delayed initially in seeking help and those who never sought help, but felt they should have done so. The findings revealed that more than half (61.2%, n=90) of participants sought help in the last twelve months. Nearly half (23.8%, n=35) of these participants had initially delayed before they accessed health services to seek help. From the participants that responded no (37.4%, n=55) to the item seeking medical assistance in the last twelve months, 13.6% or n=20 participants responded that they never sought help even though they felt they should have done so. The three main reasons that participants delayed in seeking help are highlighted in Table 8 and were as follows (i) not thinking it was serious (ii) ignoring the symptoms and (iii) lack of time. The table also demonstrates the three main reasons some of the participants did not seek help but believed that they should have done so as (i) not thinking it was serious, (ii) ignoring the symptoms and (iii) fear of diagnosis.
<table>
<thead>
<tr>
<th>Main reason delayed seeking help</th>
<th>% sought help but initially delayed (from a total of n=35, 23.8% participants' who said yes to initially delaying)</th>
<th>% did not seek help (from a total of n=20, 13.6% participants' who said they never sought help but believed they should have)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>4.1% (n=6)</td>
<td>4.8% (n=7)</td>
</tr>
<tr>
<td>Fear of diagnosis</td>
<td>6.8% (n=10)</td>
<td>8.2% (n=12)</td>
</tr>
<tr>
<td>Time</td>
<td>9.5% (n=14)</td>
<td>6.1% (n=9)</td>
</tr>
<tr>
<td>Loss of earnings</td>
<td>6.8% (n=10)</td>
<td>3.4% (n=5)</td>
</tr>
<tr>
<td>Ignoring the symptoms</td>
<td>17.7% (n=26)</td>
<td>9.5% (n=14)</td>
</tr>
<tr>
<td>Did not think it was serious</td>
<td>19.7% (n=29)</td>
<td>10.2% (n=15)</td>
</tr>
<tr>
<td>Medical instructions</td>
<td>6.8% (n=10)</td>
<td>5.4% (n=8)</td>
</tr>
<tr>
<td>Other</td>
<td>6.1% (n=9)</td>
<td>3.4% (n=5)</td>
</tr>
</tbody>
</table>

Table 8 Reasons male farmers delayed in seeking help

Question 11 was an open-ended question and was included in the survey to capture how participants defined good health. It produced unique and individual qualitative statements that were thematically analysed (Braun and Clarke, 2006) and revealed four prevalent responses among participants in defining their health. For example, nearly half (45.6%) of farmers described good health as being ‘physically fit’. The other three responses defined health as the ‘ability to work’ (16.3 %.), having ‘good mental health and wellbeing’ (17.7%) and the ‘absence of illness’ (18.4%). These findings demonstrated the holistic nature of health to farmers in Kerry and is illustrated in Figure 4.
In question twelve, the majority (87.1%), of participants rated their health as excellent to good and only two participants rated their health as poor. Despite participants reporting that many challenges in farming caused them stress, question thirteen found that more than two-thirds (67.3%) of participants said they derived a great deal of personal satisfaction from farming, and the majority of farmers said they derived a lot of personal satisfaction from farming. Participants were then asked if they smoked and/or drank alcohol. The study found that the majority (84.4%) of farmers said they were non-smokers and over one-third (36.7%) of participants identified themselves as non-drinkers.

4.2.4 Attitudes to health practices
In the survey, question fifteen was constructed to examine farmers’ attitudes towards some of their lifestyle practices and to assess their perceived level of responsibility for their health. These items were measured on a five-point Likert scale from Always, Often, Sometimes, Rarely and Never, and the findings are presented in the following Table 9.
<table>
<thead>
<tr>
<th>Q15</th>
<th>Attitudes towards lifestyle practices</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>I think about my health when I drink alcohol</td>
<td>6.1%</td>
<td>3.4%</td>
<td>7.5%</td>
<td>6.1%</td>
<td>39.5%</td>
</tr>
<tr>
<td></td>
<td>n=9</td>
<td>n=5</td>
<td>n=11</td>
<td>n=6</td>
<td>n=9</td>
<td>n=58</td>
</tr>
<tr>
<td>B</td>
<td>I think about my health before I decide what to eat</td>
<td>17.7%</td>
<td>8.8%</td>
<td>27.2%</td>
<td>.7%</td>
<td>44.9%</td>
</tr>
<tr>
<td></td>
<td>n=26</td>
<td>n=13</td>
<td>n=40</td>
<td>n=1</td>
<td>n=66</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>I am responsible for my health</td>
<td>58.5%</td>
<td>13.6%</td>
<td>17.7%</td>
<td>2.0%</td>
<td>7.5%</td>
</tr>
<tr>
<td></td>
<td>n=86</td>
<td>n=20</td>
<td>n=26</td>
<td>n=3</td>
<td>n=11</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>I get enough exercise around the farm</td>
<td>63.3%</td>
<td>6.8%</td>
<td>14.3%</td>
<td>5.4%</td>
<td>9.5%</td>
</tr>
<tr>
<td></td>
<td>n=93</td>
<td>n=10</td>
<td>n=21</td>
<td>n=8</td>
<td>n=14</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>I exercise off the farm</td>
<td>10.9%</td>
<td>15.6%</td>
<td>15%</td>
<td>5.4%</td>
<td>52.4%</td>
</tr>
<tr>
<td></td>
<td>n=16</td>
<td>n=23</td>
<td>n=22</td>
<td>n=8</td>
<td>n=77</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>I think about my health</td>
<td>16.3%</td>
<td>16.3%</td>
<td>33.3%</td>
<td>8.2%</td>
<td>25.2%</td>
</tr>
<tr>
<td></td>
<td>n=24</td>
<td>n=24</td>
<td>n=49</td>
<td>n=12</td>
<td>n=37</td>
<td></td>
</tr>
</tbody>
</table>

*Table 9 Summary of male farmers’ attitudes towards their health practices*

Over half of the participants responded *always* to the item ‘*I am responsible for my health*’ and the majority of farmers thought about their health at varying levels. The other items asked farmers if they thought about their health before they chose what to eat and before they drank alcohol. Many participants responded to *never* thinking about their health before choosing what to eat (44.9%, n=66) or before drinking alcohol (39.5%, n=58). Many participants also believed that they *always* got enough exercise on the farm (63.3%, n=93). However, more depth was required to really explore participants’ perceptions of responsibility for health and their relationship to lifestyle practices. As a result, this line of enquiry was limited, and would have been more suited to in-depth interviews with male farmers where these areas of interest could have been further explored.

The final question in the survey asked participants what could make a difference to their health. It was an open-ended question and the qualitative statements were analysed.
using thematic analysis (Braun and Clarke, 2006). The most prevalent responses that participants expressed were in relation to diet and exercise (23.8%, n=35), and stress and farm incomes (19%, n=28). For example, participants responses in relation to diet included ‘eating less, eating the right food, better choice of food and fresh produce not convenience foods, to stop eating sweets and eating less junk food/sugary foods’. In terms of exercise, responses included ‘increased aerobic activity and extra walking’, and, in relation to farm incomes, participants mentioned ‘more income from the farm, more stable income and less financial stress’. Others replied they wanted to ‘lose weight, mind the heart, and take it nice and handy, not to be overstressed’. However, other participants responded ‘I do not know’ or said that ‘nothing’ could make a difference to their health. One participant explained ‘if I thought about my health I would get nothing done’ and another participant simply said ‘I do not think about my health’ and a third participant replied ‘I can think of nothing that could make a difference to my health when I have good health’. These responses suggested that health is not an issue for many of the participants until there is a problem with it. Participants overall response to this question indicated that the majority of farmers wanted to make lifestyle changes to improve their health, particularly in relation to diet, exercise, weight loss and reducing stress levels.

4.2.5 Statistical analysis
The following section explains the procedures taken to statistically analyse the data collected from the surveys in respect to question seven, which asked farmers about the causes of stress in farming, and it displays the statistically significant and statistically non-significant findings of the survey.

4.2.5.1 Preliminary screening
Using the standard deviation of participants’ responses, the data file was screened to locate unengaged participants. To ascertain those respondents which became part of the ‘unengaged respondents’ cohort, the researcher calculated the standard deviation over the range of the participants’ responses and extracted ‘unengaged respondents’ accordingly. Since the survey included a five-point Likert scale, respondents were deemed to be unengaged if the standard deviation over the range of their responses fell
below .5. This resulted in the removal of 17 participants and reduced the sample size from \( n = 164 \) to \( n = 147 \). The responses to the Likert scale items that assessed items that caused farmers stress were assessed for normality. A skewness and kurtosis range of ± 2.2 was employed to assess normality (Sposito, Hand and Skarpness, 1983). Two items from the set of items that assessed employment type challenges, displayed kurtosis values which exceeded the tolerable range of ± 2.2. These items were:

I. Loss of control (Kurtosis = 3.821)  
II. Lack of respect (Kurtosis = 3.761)

Both loss of control and lack of respect were excluded from the calculation of an average score for participants’ employment type challenges. A set of items was combined as sourced from the literature to generate an average *causes of stress* score for each participant. The set of items that assessed employment type challenges was considered a formative rather than a reflective measure. For instance, a formative measure is one in which each item in a set of items makes a contribution to the construct being measured. In contrast, a reflective measure is one in which each item in a set of items merely reflects the construct being measured, and implies any one item can be discarded. In this respect, a formative measure was utilised in this study because there was no expectation that the set of items that purported to measure *causes of stress* were correlated to each other and equally there was no expectation that the items in the set were not interchangeable.

The researcher examined *causes of stress*, because it was deemed relevant to farmers overall health beliefs and attitudes. The *causes of stress* scores were derived by averaging seven items in the survey, where each item was assessed using a five-point Likert scale. Given that the number of items were relatively small, these seven items were assessed for internal reliability. A mean inter-item correlation of .321 provided

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42 The following set of items: *unstable incomes, pressure to expand, loss of control, lack of respect, working alone, a lot of paperwork/administration and a loss of farming community* assessed *causes of stress* on a five-point Likert scale from strongly disagree to strongly agree.

43 The reasons that the study never employed an overall stress question that self-rated stress was discussed in Section 3.7.1.
internal reliability. An acceptable inter-item correlation of between .2 and .4 is required for internal consistency (reliability). These age groups provided a significance in that they offered sufficient numbers in each age category to facilitate the employment of inferential procedures, such as:

i. Chi-Square test of association

ii. Kruskal-Wallis H test

iii. Mann-Whitney U test

4.2.5.2 The distribution of causes of stress across three categories of age
A Kruskal-Wallis H test were conducted to determine if there was differences in causes of stress scores between three age groups: Below 40 (n = 55), Between 40 and 60 (n = 40), Above 60 (n = 52). Distributions of causes of stress scores were similar for all groups, as assessed by visual inspection of a boxplot. Median causes of stress scores were statistically significantly different between groups, χ² (2) = 8.848, p = .012. Pairwise comparisons were performed using Dunn’s (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post hoc analysis revealed statistically significant differences in median causes of stress scores between the Below 40 age group (4.29) and Above 60 (4.57) (p = .001), and is attached as Appendix P. In this respect, younger farmers experienced lower levels of perceived causes of stress compared to their much older counterparts.

4.2.5.3 The distribution of causes of stress across three categories of farm size
A Kruskal-Wallis H test were conducted to determine if there was differences in causes of stress scores between farmers with three different farm sizes: Small (n = 37), Medium (n = 83), Large (n = 26). A visual inspection of a boxplot determined that the distributions of causes of stress scores were similar for all groups. Median stress scores were statistically significantly different between groups, χ² (2) = 6.121, p = .047. Pairwise comparisons were performed using Dunn’s (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post hoc analysis revealed statistically significant differences in median stress scores between owners of the Medium (4.57) and Large (4.21) (p = .042) farms, and is attached as
Appendix Q. In this regard, farmers with medium-sized farms experienced higher levels of perceived causes of stress compared to farmers with larger farms.

4.2.5.4 The distribution of causes of stress across participants’ living arrangements
A Mann-Whitney U test were performed to determine if there was differences in causes of stress scores between participants that lived with a partner against participants that did not live with a partner. Distributions of the causes of stress scores for participants that lived with a partner and participants that did not live with a partner were similar, as assessed by visual inspection. The median causes of stress scores were statistically significantly higher in participants that lived with a partner (4.42) than participants that did not live with a partner (4.29), $U = 2959.5$, $z = 2.031$, $p = .042$, and is included as Appendix R. The probability of superiority (60%) indicated there was a 60% chance that a person picked at random from the population of farmers that lived with a partner would record a higher causes of stress score than a person picked at random from the population of farmers that did not live with a partner and is visually represented in Figure 5. In this respect, the study found farmers that lived with partners experienced higher levels of perceived causes of stress when compared to farmers without partners.

![Figure 5 A visual representation of the probability of superiority](image)

4.2.5.5 Individual causes of stress items across three age groups - burden of paperwork
A Kruskal-Wallis H test were conducted to determine if there was differences in causes of stress scores arising from burden of paperwork between three age groups, Below 40
(n = 55), Between 40 and 60 (n = 40), Above 60 (n = 52). A visual inspection of a boxplot determined the distributions of causes of stress scores that arose from the burden of paperwork were not similar for all groups. For example, causes of stress scores were statistically significantly different between three age groups, $\chi^2(2) = 8.299, p = .016$. Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences in the individual causes of stress item between the Below 40 age group (63.67) and between 40 and 60 age group (81.98) ($p = .021$), attached as Appendix S. In this sense, the study found farmers in the mid-age range experienced higher levels of perceived causes of stress compared to farmers in the lowest age category in regard to the item burden of paperwork.

4.2.5.6 Individual causes of stress items across three age groups - loss of community
A Kruskal-Wallis H test were conducted to determine if there was differences in causes of stress score arising from loss of community between three age groups: Below 40 (n = 55), Between 40 and 60 (n = 40), Above 60 (n = 52). The distributions of causes of stress scores that arose from loss of community were not similar for all groups as assessed by visual inspection of a boxplot, and the causes of stress scores were statistically significantly different between three age groups, $\chi^2(2) = 13.124, p = .001$. Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences in individual causes of stress item between the below 40 age group (60.59) and between 40 and 60 age group (85.31) ($p = .001$), and is attached as Appendix T. In this regard, farmers in the mid-age range experienced higher levels of perceived causes of stress compared to farmers in the lowest age category with respect to the item loss of community.

4.2.5.7 The distribution of perceived health scores for the item exercise off-farm across income groups
A Kruskal-Wallis H test were conducted to determine if there was differences in the distribution of scores to the item exercise off-farm across income groups, Income $\leq$ 25% (n = 40), Income Between 25% and 75% (n = 31), $\geq$ 75% (n = 74) (percentage of income
earned from farming). The distributions of scores to the item Exercise off-farm were not similar for all groups as assessed by visual inspection of a boxplot. Scores were statistically significantly different between three income groups, $\chi^2 (2) = 8.830, p = .012$. Pairwise comparisons were performed using Dunn’s (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences in scores between the ≤ 25% income group (88.39) and between 25% and 75% income group (66.27) ($p = .049$). Statistically significant differences in scores occurred between the ≤ 25% income group (88.39) and the ≥ 75% income group (67.5) ($p = .017$), and is attached as Appendix U. Therefore, farmers that earned the least amount from farming expressed greater tendency to exercise off-farm compared to farmers in the higher income earning ranges.

4.2.5.8 The distribution of scores for the item responsibility for own-health across age groups

A Kruskal-Wallis H test were conducted to determine if there was differences in scores for the item responsibility for own-health between three age groups: Below 40 (n = 55), Between 40 and 60 (n = 40), Above 60 (n = 52). Distributions of own-responsibility scores were not similar for all groups, as assessed by visual inspection of a boxplot. Own-responsibility scores were statistically significantly different between three age groups, $\chi^2 (2) = 8.543, p = .014$. Pairwise comparisons were performed using Dunn’s (1964) procedure with a Bonferroni correction for multiple comparisons. This post hoc analysis revealed statistically significant differences in own-responsibility scores between the 40 and 60 age group (59.09) and the above 60 age group (81.86) ($p = .013$), attached as Appendix V. Therefore, the study found that farmers in the highest age range expressed more responsibility for their own-health compared to farmers in the mid-range age category.

The study also found a lack of association $\chi^2 = 2.83, = .243$ between the location of a livestock mart (3 sites) and the decision of respondents to seek medical assistance (y/n). Yet, the researcher’s prior expectation was that one of the sites (livestock mart 2) would reveal a statistically higher decision to seek medical assistance because a recent health
check had taken place. In this respect, this non-significant finding was deemed worthy of inclusion because it contradicted the researcher's prior expectations.

4.2.6 Section one conclusion
In conclusion, the first section of this chapter presented the quantitative results of the entire survey inclusive of the qualitative elements to promote clarity and cohesion in accordance with the structure of the survey. The quantitative findings revealed that the majority of farmers perceived that the farm challenges presented in Table 7 caused them stress. Statistical tests were employed to determine if there were any differences in the perceived *causes of stress* among different age groups. They found that the mid age group (40-60) experienced higher perceived *causes of stress* levels in relation to *burden of paperwork* and *loss of community*. Younger farmers were found to have lower perceived *causes of stress* levels compared to their much older counterparts and farmers in the highest age range expressed higher *responsibility for own-health* compared to farmers in the mid-range age category. The statistical analysis of the data established that farmers with medium-sized farms experienced higher levels of perceived *causes of stress* when compared to farmers with larger farms. It also revealed that farmers that *lived with partners* experienced higher levels of perceived *causes of stress* when compared to *farmers without partners*, and it identified that farmers that earned the least amount from farming expressed greater tendency to *exercise off-farm* compared to those farmers in the higher income earning ranges. In this respect, farmers were found to experience stress related farm challenges, and the *causes of stress* experienced by farmers differed in some areas depending on age, relationship status and off-farm employment. The next section presents the qualitative data collected from interviews with healthcare professionals in Kerry.

Section II
4.3 Qualitative findings
The following section presents the qualitative data that was generated from semi-structured interviews with eleven healthcare professionals that worked in the primary healthcare setting in County Kerry. The study chose a variety of disciplines to explore different insights of male farmers' beliefs, attitudes, and practices towards their health.
The qualitative findings revealed that the (i) **challenges to current service provision** and (ii) the **lack of ownership of health** were the two main themes that emerged from the qualitative data. The relationship between the themes and subthemes is presented in Figure 6. To assist the reader, each of the main qualitative findings will begin with an overview of the main theme and subthemes that follow. It also demonstrates segments from the interview transcripts that supported the emergence of the subsequent themes. A description of each theme and accompanying subthemes is presented, as well as illustrative quotations where appropriate to contextualise the themes.

4.3.1 **Challenges to current service provision**

The first theme describes the **challenges to current service provision from both the service itself and farmers themselves**. The first subtheme explores the **system itself**, and describes the (i) over reliance on the GP as the gatekeeper to other services, and in this
light, it highlights the inherent problems of current service provisions over reliance on male farmers to access their GP. The second subtheme explores (ii) a one-size-fits-all approach to current service provision for farmers. It identifies the implications of current service provision for male farmers themselves in terms of their use of services, and it pays particular attention to the challenges male farmers pose to service providers. Table 10 provides an overview and an example of the emergence of the first main qualitative theme and its subsequent subthemes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Inclusion Criteria</th>
<th>Data Extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme One: Challenges to Current Service Provision: System</td>
<td>This code related to the challenges evident within current service provision in the community.</td>
<td>'...all healthcare professionals have the same issues no way of proper communication and so farmers slip through.... slip in an out' (participant 3)</td>
</tr>
<tr>
<td>(i) Over reliance on the GP as the gatekeeper to all other services</td>
<td>This code related to extracts where healthcare professionals referred to the GP in terms of accessing services. It related excerpts specifically to the issues that current service provision has on male farmers' health.</td>
<td>'...we would only pick up the people who go to see the doctor' (participant 10)</td>
</tr>
<tr>
<td>(ii) One-size-fits-all approach to current service provision and the implications for male farmers</td>
<td>This code included items that described a general approach to health promotion. It highlighted the lack of (i) preventative healthcare, (ii) targeted healthcare and (iii) gender awareness in the community in relation to male farmers.</td>
<td>(i)'...no health promotion for farmers' (participant 6)</td>
</tr>
<tr>
<td>Theme Two: Challenges to Current Service Provision: Farmers</td>
<td>It included challenges specifically facing male farmers in the community in County Kerry. Items included difficulties in male farmers engaging in health services.</td>
<td>'...How do you engage with somebody that wants to be isolated?' (participant 8)</td>
</tr>
<tr>
<td>(i) Farmers themselves</td>
<td>This code included items that related to healthcare professionals' experiences and perspectives on male farmers and the challenges they present to services providers and current service provision including (a) delays in help seeking and (b) a quick fix attitude to their health.</td>
<td>'...the lads (male farmers) will tend to contact us when things are well advanced' (participant 7)</td>
</tr>
<tr>
<td>(ii) When the problem resolves the effort dwindles back to their old ways' (participant 4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 Challenges to current service provision - system
During the interviews, it became evident that primary care teams appeared fragmented with little collaboration, and, in some instances, meetings occurred less than twice a year. There were considerable differences among healthcare professionals in this regard, and some of the healthcare professionals found it difficult to recall when the last primary care team meeting was held, or, equally, when all the members of the multidisciplinary team attended. For example, participant 4 stated that:

'Primary care is fragmented and we work parallel to other members of the multidisciplinary team.... particularly mental health services. It is difficult for us to reach or engage with the mental health services... it is difficult to access into their service and it is not easy to contact mental health'.

The divide between the general and mental healthcare professionals was further illustrated by participant 1 as he explained:

'Mental health is limited, in that we do not interfere in peoples' lives versus, say, general medicine, so we do not say 'you are smoking.... stop ....' that is the generals (nurses') thing'.

4.3.2.1 One-size-fits-all approach to healthcare
This study found that current service provision lacked targeted interventions on a regular basis for male farmers in the community. Several of the participants highlighted the lack of planned health promotion targeted at male farmers in the community.

'We are not really doing a lot on health promotion with farmers. We are doing a little bit of firefighting, where we are getting in there when the problem has occurred instead of preventing it, maybe' (participant 6).

Instead, current service provision relied on healthcare professionals to implement health promotion in their daily work, if the opportunity arose, but it was an individual effort, opportunistic, and not a planned activity. For instance, participant 11 described the current approach to male farmers' health promotion as something that happens 'by default'. While, participant 9 explained that her current interactions with many male farmers was by chance:
'...opportunistic interaction, say you are going to the wife, and they (male farmer) might ask you something so that, rarely..... you get very few, unless they have a hip done or have an elective surgery'.

The implications of the challenges to current service provision in relation to male farmers was described by participants. For instance, participate 3 explained that:

'All healthcare professionals have the same issues .... There is no way of proper communication and so farmers slip through – they slip in and out'.

While, participant 4 appears to suggest that farmers health has been overlooked in the community setting. She highlighted the implications of current service provision to male farmers when she stated:

'Male farmers are a forgotten group within primary healthcare and can fall out of the loop.... we do not flag them enough...... the team should highlight male farmers'.

There was also a consensus among participants that there was a lack of targeted and culturally appropriate interventions for the farming population. Participant 3, similar to participant 4 noted the lack of services targeted at male farmers:

'...current programmes do not suit farmers....they are very private......we must tailor services to users needs'

In respect to tailoring services to farmers' needs, participant 7 explained there were distinct differences required to successfully deliver services to male farmers:

'The men's sheds movement is very successful, and that is great for guys who worked in factories all their lives, and they can meet up with other likeminded individuals and they can do things together. That does not work for the farmers, because these lads have this tie to the land, and they do not want to leave their farms. They do not want to interfere with the rhythm of life because they have to look after their animals and so on'.

The inherent difficulties for farmers to access a one-size-fits-all health service was evident in the following excerpt:
'...we would have some farmers coming to clinics. Their self-care would not be that great...... come in from the farm basically...... so shoes would be... and you might be doing their feet and they might not be washed very well and their clothes too, but they are coming from their job which goes on all day and all night. I suppose it is just the environment they are in' (participant 4).

The study also found that some participants lacked awareness of the implications of the one-size-fits-all approach of current service provision to male farmers. For example, when participant 8 was asked about men’s engagement with health services she replied 'I would not distinguish between males and females'. The lack of focus on gender continued throughout the interview as she added:

'It is very hard for me to talk about males when I am not a male... men do not engage any differently'.

In this respect, it appears participant 8 was unaware of the influence that gender had on male farmers’ health. By comparison, the male perspective differed in this regard as participant 3 highlighted that 'men’s health is not seen as a priority or important'.

4.3.2.2 An over reliance on GPs as the gatekeeper to all other services
There was a strong consensus among participants that health promotion in the community relied heavily on the GP to act as the gatekeeper to individuals accessing other services. For example, participant 8 explained 'we are hugely reliant on the GP as that gateway' and participant 10 reinforced the reliance on GPs when she said, 'we would only pick up people who go to see the doctor'. The same over reliance on the GP was evident in relation to accessing mental health services in the community. For instance, participant 1 pointed out that GPs needed to 'flag' and refer individuals in order for them to access community mental health services:

'...they need to be referred by their GP to access services ............... GPs should be screening for depression as they (male farmers) come in to the surgery'.
In addition, it seems GPs referred individuals for the treatment and management of conditions far more than for preventative health measures. For example, participant 4 explained how they received:

'...a massive amount of referrals from the GP ....... the main thing would be for leg ulcers'.

The issue of an over reliance on GPs as the gatekeeper to all other services was particularly evident in relation to men. One of the participant's highlighted the problem of men who do not attend the GP when she said:

'...you would not get the same referral that you would for women, so either they are not presenting to their GP or I do not know....... there is an awful lot of women actually' (participant 9).

While, participant 7 emphasised the inherent problem of the current services over reliance on male farmers to go to the GP in the following extract:

'I actually do think that there is a cohort of men (male farmers) out there who are actually being very poorly served. I mean we see them when they have illness and sickness, but it tends to be only when they are broken down that we actually see them'.

In this light, it appears that many healthcare professionals attempted health promotion in their daily work, but their workloads meant that engagement with male farmers generally only happened through opportunistic encounters or when they presented with an issue.

4.3.3 Challenges to current service provision – farmers themselves

Many participants felt that male farmers were a challenging group to engage with concerning their health. There was a consensus among participants that, unless male farmers presented with an issue, they had no way of knowing about them or how to reach them. For instance, participant 3 described male farmers as 'private people' who are 'slow to let people inside their door', and this concept was further elaborated on by participant 8, who argued, 'how do you engage with somebody that wants to be
isolated?" The challenges of engaging with male farmers was further illustrated by participant 7:

'...they do not always make it easy for people to talk to them. They are by their nature comfortable. They will exist. What I mean by that is, they function within a certain sort of defined parameter that they are comfortable with'.

The practical challenges in reaching male farmers in relation to preventative health measures was further emphasised by another participant, as she explained:

'...it is very hard to change them (male farmers).... They are slow to engage.... some do not want to engage with you at all.... not much you can do.... others might .... It is only when they become ill.... accidentally into services because they were sick and they went into hospital that we get to know about them in the community. Generally, I would say 'the well', if you can call them 'the well', appear to be, the well farmer, we would have no way of going to their house, you cannot just arrive at their door' (participant 11).

4.3.3.1 Delayed help seeking practices
Several participants found male farmers only engaged in the health services when a health issue had significantly progressed. It appears male farmers' experienced significant delays before accessing services and according to participants they usually accessed the services in the late stages of an illness. For instance, participant 4 believed that many farmers would need to have a 'crisis' before they would go to their GP and engage. While, participant 2 described male farmers delayed in accessing health services until their health was significantly impaired:

'...farmers do not turn up at GP clinics unless there is something wrong and they will only come when it has actually maybe gone beyond a simple procedure. They will only come when they have something very wrong with them'

It seems in many incidences, male farmers only sought help, when a health issue was acute or when it had significantly impacted on their quality of life. For example, participant 3 explained the challenges service providers faced when male farmers did not readily access services:
'...there are men living on farms in their mid-fifties to eighties who are left to their own devices and do not engage in interventions. only do so when they are diagnosed with a chronic disease or complications. acute crisis management rather than how would you say ...there is no real prevention. say if there is a crisis they (male farmer) are looked after but in terms of follow up care because they do not engage again once they are up on their feet or until something happens to them again...when they are found in the shed after a heart attack or a stroke...it then becomes a crisis and there is engagement from services'.

Many healthcare professionals voiced concerns with regard to how long some farmers waited before they accessed services or attended their GP. Participant 5 felt that many farmers never engaged with their health:

'I think there is still that reluctance to go about something unless something happens... they are (male farmers) not doing something in a preventative way'.

While participant 10 mentioned several times during the interview that, from her experiences with male farmers, they tended to ignore health issues:

'...male farmers would be even more likely (than other men) to try to talk down their symptoms and get on with things and not complain as much and they would be less likely to do something about it...... they were waiting for it (injury) to get better and then it did not get better...'

It appears some participants found male farmers' reluctance to attend a GP was not only because they ignored the issue or were reluctant to access the services. For instance, participant 6 explained that male farmers' delays in seeking help was influenced by their perceptions of the seriousness of a health issue:

'...they leave things go, they think it is only a small little cut, it is only a small little accident or whatever and they tend to wait and see what happens instead of going to the doctor straight away. So, often they go late, often...... we would see them for leg ulcers and things like that, because they left it for weeks before they went to any doctor about it and it might have got infected or something like that......

Why it got this far ....

Routine answer is, oh sure, I thought it was only a little cut and that it would go away after a few days, and then it did not and I tried a bit of Dettol on it or I tried this on it or I tried that on it and then it was not.... and then it was getting sore and then it was getting painful and then I said I had better go'.
In this respect, during the interviews it was apparent that the reasons male farmers delayed seeking help, in some instances, was because they perceived the health issue as minor, when in fact, it was quite serious:

‘...the lads (male farmers) will tend to contact us when things are well advanced, and I am talking about that cohort now, do not get me wrong, we are talking again about the whole spectrum, but I am looking at the particularly ‘at risk’ group, these lads do tend to turn up at the very end of the various processes.... I saw a man during the week who has had a cancer in his neck for the last year and has ignored it. I asked him if it was bleeding, and he said ‘no’ when the evidence was that it actually was bleeding’ (participant 7).

It appears some male farmers may have lacked the required levels of health consciousness and awareness to know when they should have gone to the doctor. In this light, it raises concerns in relation to male farmers’ perceptions about the seriousness of a health issue and their subsequent help seeking practices.

4.3.3.2 Quick fix attitude
Some of the healthcare professionals felt that it was also a challenge to keep male farmers engaged in the services once they had sought help. For example, participant 4 explained that many male farmers had a ‘quick fix attitude’ to their health issues. She found they never attended follow up appointments once they perceived the problem was ‘sorted’. Participant 10 also shared similar experiences to participant 4 and highlighted that:

‘...if there is a quick fix .... that might get them to come back, but if you are talking about getting them to come back a few times and doing exercises and doing a bit more for themselves they may not be as keen to come back for the next appointment...................and when the problem resolves the effort dwindles back to their old ways, and if it is long term, or lots of effort is required, they are not as engaged or interested’.

Similarly, participant 5 found that male farmers reverted back to their old routines once they perceived the issue was sorted. She explained ‘once their (male farmers) done with you... closed book, whereas women keep in touch’. Farmers’ disengagement in the services was equally experienced by participant 9:
In sum, the qualitative data generated from the first main theme and its subsequent subthemes revealed that participants found that both current service provision and farmers themselves posed challenges, when they attempted to engage or maintain engagement with farmers in relation to preventative health measures. The interviews revealed current service provision was problematic in relation to male farmers, because it relied on them to access the services. It identified that a one-size-fits-all approach to male farmers’ health meant male farmers were a ‘challenge’ for participants to engage with in their daily work. Participants also found male farmers delayed in seeking help, and some suggested this was because they ignored health issues or were reluctant to access services. However, others found that in many instances, male farmers had inaccurate perceptions of the seriousness of a health issue, and this meant they often presented (too) late with the onset of an illness. This theme also revealed that participants found male farmers were a challenge because they had a ‘quick fix attitude’ to their health and disengaged from the services once they perceived the issue was resolved.

4.4 Lack of ownership of health
The second main theme that developed from the semi-structured interviews related to the lack of ownership healthcare professionals believed farmers had over their health. This concept is presented through healthcare professionals descriptions of their experiences of engaging with this group of men, and illustrations that reinforce this concept are provided. The first subtheme comprises of participants insights of male farmers (i) health practices and their beliefs and attitudes towards their health. The second subtheme theme explores the concept of male farmers (ii) ‘having to be told what to do’ particularly by a ‘female significant other’. It illuminates participants’ experiences of male farmers’ lack of ownership of their health, and also emphasises the negative impact of this dependency on some male farmers’ health. Table 11 provides an
overview and an example of the emergence of the last main qualitative theme and its subsequent subthemes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Inclusion Criteria</th>
<th>Data Extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme Lack of Ownership of Health</td>
<td>This code explained healthcare professionals' experiences of male farmers lacking ownership of their health.</td>
<td>'...luck of the draw attitude to their health' (participant 9)</td>
</tr>
<tr>
<td>(i) Health practices</td>
<td>Descriptions of many of the health practices of male farmers are included under the code that relates to a lack of ownership of their health.</td>
<td>(a) '...they were trying to farm with two crutches' (participant 7)</td>
</tr>
<tr>
<td>(a) Health and Work</td>
<td>(b) '...live out of the frying pan' (participant 3)</td>
<td></td>
</tr>
<tr>
<td>(b) Diet and Exercise</td>
<td>(c) '...stiff upper lip applies' (participant 7)</td>
<td></td>
</tr>
<tr>
<td>(c) Mental Health</td>
<td>(d) '...better chance if they have a good wife or sister or someone looking after them' (participant 3)</td>
<td></td>
</tr>
<tr>
<td>(d) Relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) 'Have to be told what to do'</td>
<td>This code identified specific reasons for lack of ownership in relation to being 'told what to do by others and particularly by 'female significant others'.</td>
<td>'...they are passive .... told to do it' (participant 3)</td>
</tr>
<tr>
<td></td>
<td>'...they do what their told by their wives' (participant 9)</td>
<td></td>
</tr>
</tbody>
</table>

Table 11 A collection of illustrations that demonstrate the emergence of the second main theme and its subsequent subthemes: male farmers’ lack of ownership for their health

4.4.1 Health practices
The second main theme relates to male farmers lack of ownership of their health. The subthemes explore male farmers’ health practices and illuminate the overarching concept of farmers’ lack of ownership for their health. In this respect, there was a general consensus among participants that male farmers lacked ownership of their health. For example, participant 9 referred to male farmers as having a 'luck of the draw' attitude towards their health and she explained:

'...it is like it is somebody else's responsibility ....... a lot of men are like that in general .... But rural, they do not have time....... you would have a fella there and he would cut his hand on something. He will leave it until it goes to the end and he might have to end up with I.V. antibiotics because he was too busy.... so maybe that is a mind-set that has to be changed alright that you have to be responsible for yourself as well'.
While, participant 5 described self-neglect and reluctance to seek help signified male farmers' lack of ownership of their health:

'...I think they (male farmers) are very poor at taking care of their health. I think the opportunities are there, but they are reluctant to take them'.

However, in most instances, participants illustrated farmers' lack of ownership for their health through their insights of the attitudes, beliefs and practices male farmers displayed towards their health during their interactions with them. In this respect, the subthemes that follow illuminates participants insights into male farmers lack of ownership for their health.

4.4.2 Work and health
There was a consensus among participants that farmers placed more value on their work than they did on their health. For instance, participant 10 explained that:

'...male farmers do not rest the injury, forget that .... I have a fella he is quite a young fella; he must have been in a few times in the last year. All of his injuries are overuse injuries so it is from one of them. He jumped off the tractor and hurt his hip and there has been a number of things but one of them things you have to do is to address how much work you are doing and try and rest the injury and that never happens ....so it is always ......their working through it ...... I think you have to take that into account ...I think at the start I used to tell them 'oh you need to rest, you need to slow down' and now you try and maybe talk about ways they might be able to avoid some activities but still do the other ones. I do not think it is feasible. They have to work and they have to pay the bills .... they could have a torn ligament in their knee but they are probably still out in the field and driving the tractor, so you kind of know they have not taken a break, so I do not know if there is ever a return to work, they are always at work'.

Participant 4 found farmers work responsibilities often superseded their responsibilities for their health:

'...they do not actually get a break ...they cannot put it away, they are worried about their sheep or their cattle ......... I suppose they do not take a whole lot of time to themselves, to look after themselves, they do not see that as part of their
In this sense, it appears farmers’ beliefs, attitudes and practices towards work meant some farmers neglected their health. For instance, participant 5 described an incident where an older bachelor farmer had stayed out all night looking for his sheep and was ‘found in the morning with the animals’, and participant 9 explained their work commitments may have a negative influence on their health:

‘...I suppose.... bachelors.... I have met one or two in a bad situation... hygiene wise... all that would be gone.......... more socially isolated as well do not tend to engage as much and maybe fear of having to go into hospital who would look after livestock.... sometimes their animals come before themselves. They would be taking them to the vet fine and sorting them out but maybe not themselves’.

Similarly, participant 7 found self-neglect was particularly evident among older farmers who had failed to secure a successor. He provided a detailed account of his experiences of older single male farmers self-neglect and the negative influence their over commitment to work had on their health:

‘...hygiene is not great. They are not looking after themselves, not washing themselves, not washing their clothes, not washing their dishes and often times they are working crazy, crazy hours and doing things that are physically hugely troublesome.....I have got lads who are in their fifties, sixties and seventies and beyond who have not organised succession. I am seeing men in their mid-sixties whose health is beginning to break down, and these were successful farmers and their health is beginning to break down because of the workload, and they do not really have any exit strategy, they do not know what to do. Partly the difficulty is, that for many of the lads, they have no idea what to do with themselves if they are not farming, and that is something else we need to sort of tap into. I mean just by way of anecdote, I had two lads, two old men, they have since passed away, and the two boys had increasingly severe arthritis, and the problem was that, periodically, one or other or both of the men would end up in hospital because of their illnesses. They had a sister in X and she came down to sell the cattle because the cattle were going to die because there was no one to look after them and the boys would get half-way better and they would come out and they would stock up again and I had these lads, both of the men were using two crutches to get around and they were trying to farm with two crutches, you know. Crazy stuff........part of the difficulty is that they do not know when to call it to a halt. What I mean by that is, that you have lads that are tipping away at farms long pass the point and time where they are physically capable of doing it’.
In this respect, it seems in many instances male farmers, particularly older bachelor farmers that had failed to secure a farm successor, placed more responsibility on their work than they did on their health, and subsequently, this had negative implications on their health outcomes.

4.4.3 Diet and exercise
Participants illustrated male farmers' lack of ownership for their health through lifestyle practices such as diet and exercise. For instance, participant 3 described male farmers' diets as 'living out of the frying pan', and participant 7 explained it was extremely difficult to encourage male farmers to improve their dietary practices:

'Their diet is appallingly poor, it is convenience food, and it is whatever is the easiest for them to cook up'.

In regards to exercise, male farmers' perceptions of exercise differed significantly when compared to health professionals' perceptions of adequate exercise. For instance, participant 10 explained:

'...I think because their job is so physical they do not really consider exercise a physical activity. So you ask them what they do for a living and they say farming, and then you ask them do they go out walking or cycling, and the majority of them kind of look at you, like, of course not, because they think farming is so physical, they think that is enough, that there is enough done.......I think they do feel like they are doing such hard work already, but that is not necessarily working the right muscles to help their shoulder or their hip, or its not necessarily getting their heart or their lungs fit either. So, even though they have this perception that they are active and on their feet all day, they might not be necessarily physically fit or have the right muscles that are strong, and so they can be prone to injuries then....... I think that, even though their job is a tough manual job, it still is not working their cardiovascular system. I think that they are not fit, even though they are doing a really heavy job. It is hard to explain, so they are doing lots of lifting and dragging and pulling, but they are not out on a bike for sixty minutes getting their heart rate up and getting themselves fit, so that is two different things'.

Participant 8 highlighted similar observations about male farmers' perception of exercise. She explained their perceptions of exercise may be inadequate:
‘...I suppose that is one of the things that I definitely do find when clients come in from the farming background. They look at farming as being on their feet all day long, and, do not get me wrong, I know that it is hard work, but they feel that it is part of their physical activity, where it is not. They have to realise that you have to increase your heart rate, you have to feel that pull on the calories as well and the muscles. Sometimes they may get that in the work they are doing, but sometimes they might not, and even just opening up that kind of idea and suggestion to them...’.

In this sense, it seems there was a gap between participants and farmers’ perceptions of diet and exercise, as participants found farmers’ perceptions of diet and exercise were in many instances significantly different from recommended guidelines.

4.4.4 Mental health
Many participants felt that male farmers, and particularly older single farmers, were extremely isolated, and that it impacted on their mental health and wellbeing. Several participants found farmers that were in relationships were less isolated. For example, participant 6 explained:

‘...it depends if they are married or not........ because I think the bachelor farmers are very much on their own and a little bit isolated’.

The lack of social outlets and the negative impact of social isolation on male farmers in rural Kerry was explained by participant 7:

‘...they have very little in the way of social outlets. They might watch television for a couple of hours in the evening, they might on occasion go for a pint down in the nearest village or town, but that is about the size of it, and so their lives can be quite monotonous. They do not have outlets. That is the difficulty, and trying to create the outlets is the issue......there are significant issues with social isolation.... access to other people, getting out socially and that kind of stuff and so one of the concerns is, it is tip of the iceberg stuff... the reality is that, certainly in Kerry, and I have no doubt throughout the country, what you are seeing is an increase in the number of older single men dying through suicide, and a lot of them, I think, are of a farming background’.

Participant 7 also highlighted that he found more men were attending their doctor, but he added that there was still an attitude that they had to be strong and resilient to mental health issues.
'The perception is that women have lots of mental health problems or at least, not so much mental health problems .... But lots of emotional issues. The reality is that women will talk about their emotional issues whereas men do not. Now, in fairness, it is changing, and I am seeing more men coming forward, but it would still be the case that I would not see as many men as I see women. With the men, there is the still the attitude among some of them that you have got to suck it up'.

In this sense, it seems gender influenced male farmers' beliefs, attitudes and practices towards their mental health. This was further reinforced by participant 7 when he said:

'Men are not sharers. They do not share their thoughts, and, if they do so, it is only reluctantly, and the concept of men with a stiff upper lip still very much applies'.

This appears to imply that men could be uncomfortable or try to hide health issues. One of the participants explained that:

'I think women can be quite good and receptive generally ...men tend to say 'no we are grand'.... maybe they see it as a stigma or maybe they want to carry on with what they are doing and maybe not admit that there is age or health issues there' (participant 9).

Some of the participants highlighted that male farmers required several engagements before they felt comfortable speaking about mental health issues. For example, participant 9 explained that 'for personal questions you would have to see them a few times'. Participant 11 shared similar experiences of engaging with male farmers. She explained to encourage male farmers to speak about mental health difficulties rapport needed to be developed overtime:

'...it is only when you go in there overtime... that they get to know you and you might kind of encourage them... not go in all guns blazing the first day and say you need to do this, this and this, but little bits of information often, and reinforcing it all the time, helps I think' (Participant 11).

The importance of developing rapport with male farmers slowly and overtime was highlighted by participant 7:
...it is not just a question of the guy who comes in with the head cold or whatever.... yes, he wants to talk about that, but in my own experience they often have other things they want to say to you, and it is only overtime that in discussing things with them, it is not one single bite of the cherry, you will eventually get to the point where the lads (male farmers) will say they are lonely.

The healthcare professionals also acknowledged other challenges faced farmers, particularly in rural areas. For instance, participant 8 found that many referrals to her were not just about diet:

...it is not just dietary matters affecting their health, but there are often stressors in their lives... I have referred far more people to counselling in the last two years than I have since I started (fourteen years ago).

While several other participants identified finances, (participant 8), suicide and poverty (participant 2), isolation (participant 3) and high rates of suicide (participant 4) had impacted on farmers’ health and wellbeing. In this sense, the majority of healthcare professionals recognised that farming was a stressful and isolating occupation for many men, particularly those in rural areas and those who are unmarried and ageing.

4.4.5 Relationships
More than one healthcare professional mentioned the influence of family in an attempt to explain some male farmers’ unhealthy behaviours and practices. For instance, participant 10 found farmers’ beliefs and attitudes towards their health was significantly influenced by their parents:

...from years and years of just being told to get on with it, and not just their generation it is maybe coming from the generation before and the generation before......typical Irish thing as well, do not complain about things and just get on with it

Participants also found peers opinions about health related issues had a significant influence on farmers’ health beliefs, attitudes and practices. For example, participant 3 found male farmers valued peers advice on health issues, because they shared similar
backgrounds and understood 'how they clicked' and participant 10 described the importance of homogeneity among male farmers as ‘people in the same boat...of the same mind-set...’. She found it was ‘not so much always what the healthcare professional was saying’ but rather what peers had to say that was valued by farmers. This point was further emphasised by participant 5 as she explained:

‘...they (male farmers) do not always hear what the healthcare professional is saying....it is the other person at the mart and what they advise.... they are relying on the experience of their friends’.

Several participants found married farmers had better health outcomes than single male farmers. For example, participant 3 explained that:

‘...males have a better chance if they have a good wife, sister, or someone looking after them’.

Similarly, participant 8 found that she received fewer referrals for married men on how to prepare meals.

‘...we do not tend to see an awful lot of married farmers. Now I have them, but it would be more single farmers that are engaging’.

Participant 11 shared this concern for the older single male farmers as she said:

‘...the fifties, sixties, seventies age groups who are unmarried, I think is a big thing. They do not have the wife, I suppose, to be cribbing and telling them to go off and do this and do that’.

In sum, it appears family, peers and relationship status influenced male farmers’ health beliefs, attitudes and practices. Participants also identified that wider issues such as farmers’ work (environment), finances and social isolation had a negative influence on male farmers’ health. In particular, older single farmers that failed to secure a farm successor, and continued to run their farms, despite their ability to do so, were considered at most risk.
4.4.6 ‘Have to be told what to do’
The second subtheme relates to the concept of ‘having to be told what to do’. It is interrelated with the main theme and the first subtheme, because it illustrates participants’ insights into male farmers’ lack of ownership for their health. An appropriate use of illustrations is provided to highlight the implications for male farmers that depended on others, and in particular a ‘female significant other’ to take responsibility for their health. There was a general consensus among participants that male farmers were detached from their health. For example, participant 3 described male farmers’ engagement with their health lacked ownership:

‘...they are passive... they are told they have diabetes, they are told go to the doctor, they are told to do it..... they come into the pharmacist to get their medicines because they are told to do it, they go to the GP because they are told to do it......male farmers are told to do it...... go to the doctor ......told to do it ......go to the pharmacist .... told to do it’.

Other participants found male farmers had to be told or instructed by someone else to engage in the services. For instance, participant 2 found that ‘men seem to need to be told that they have to do it’ (go to the doctor). Similarly, participant 10 explained that the main reason most male farmers came to see her was because ‘the GP sent them in, or their wife told them to come in, or someone told them to come in’.

Several of the participants highlighted male farmers had an over reliance on a ‘female significant other’ to take care of their health. For instance, participant 9 explained that ‘wives make the appointment and they (husbands) are told they are going’. While participant 10 found farmers wives took full responsibility for their husbands’ health as she explained ‘when older men come in with their wives ...their wives do all the talking’. Similarly, participant 3 described male farmers reliance extended to a wide range of females:

‘...I think there is not much engagement with their health, they are more prompted or pushed by a significant female in their lives, be it a wife, a daughter, a mother, a girlfriend or a sister. Again, you have exceptions, but I could count the number of fellas on the book like that’ (Participant 3).
In this sense, it seems on many occasions, a ‘female significant other’ took responsibility for male farmers’ health. The level of involvement and persuasion females had to pursue in order for their husband to attend their GP was illustrated by participant 5:

‘...women/female significant others pushing them in the door to the GPs, nagging men to go to the doctor or bringing men to appointments, asking all the questions, making all the appointments...... when I worked in a GPs surgery, women would come in a lot more and women would be pushing the men in the door’ (participant 5).

While, participants 3 explained some male farmers had a significant reliance on their mothers since childhood:

‘...living with their mother ....... she did everything for them.... Irish mother effect and now she has passed away’.

The negative implications of some male farmers dependency on females to take responsibility for their health was illustrated during the interview with participant 8, when she explained that older farmers were referred to her, because they lacked the ability to prepare meals for themselves:

‘...three quarters of the farmers I would see are not married.... and are in their late forties, fifties, sixties......recent bereavement .... Mum used to prepare all the meals’.

Yet, it appears healthcare professionals were also part of the ‘telling them what to do cycle’. For example, participant 2 stated that male farmers were ‘willing to do what we tell them’, while participant 4 explained that ‘the majority of them would go with us’. However, participant 3 contradicted this approach and advocated a ‘collaborative approach’ to engage them in their health. He also found that an authoritarian or paternalistic approach was ineffective with male farmers:

‘...you must come to this for the next six weeks .... you must do this............you must do that............they do not respond well to this ........ instead, ask them what will work best for them’.
In this sense, it appears in many instances, that others and in particular a ‘female significant other’ had a significant responsibility for the health of male farmers in their lives. It raises concern for men who may not have anyone to tell them to go to the doctor, and equally for men that have developed a dependency on others, particularly a ‘female significant other’ to ‘tell them what to do’ in relation to their health.

4.4.7 Section two conclusion
In sum, the second qualitative section of this chapter presented the two main themes that emerged from the semi-structured interviews with healthcare professionals that had engaged with male farmers, in the primary care setting in County Kerry. The qualitative findings revealed that both the system itself and farmers themselves presented challenges to healthcare professionals’ engagements with male farmers. For instance, it appears current service provision relied on male farmers to attend their GP with a health issue, and in this respect, it raised concern in relation to male farmers that were reluctant to access services. There was a consensus among participants that farmers were a challenge to the health services because they delayed accessing services and often presented (too) late with the onset of an illness. Participants found they ignored issues or perceived the issue was only minor, when in fact, it was in many instances, serious. In this respect, qualitative findings revealed that some male farmers lacked health consciousness in relation to their health, and lacked the ability to know when a health issue warranted a GP visit. Healthcare professionals also found it was difficult to keep farmers engaged in the services once they perceived the issue had resolved. In this respect, many participants referred to male farmers as having a ‘quick fix attitude’ to their health. In this sense, the first main theme found that male farmers’ perceptions of the seriousness of a health issue directly influenced their concomitant health behaviours and practices, and influenced their help seeking practices and engagement with the health services.

The second main theme illuminated the concept of male farmers’ lack of ownership of their health. It was alluded to, in both the quantitative findings, and the qualitative findings that emerged from the first qualitative theme. In this theme, participants illustrated farmers lack of ownership for their health through their insights of the
attitudes, beliefs and practices male farmers displayed towards their health, during their interactions with them. Participants illustrated that some male farmers lack of ownership of their health was attributed to a dependency on others 'to have to tell them what to do' in regards to their health. There was a consensus among participants that many of the male farmers they had engaged with exhibited an over reliance on a 'female significant other' to take responsibility for their health. In this respect, the second main theme found that some male farmers may lack the basic skills to take care of themselves in the absence of a 'female significant other', and this was particularly evident among single older male farmers.

4.5 Chapter conclusion
This chapter presented both the quantitative and qualitative findings separately, and in the sequence in which they were collected and analysed. The findings represented a small sample of both male farmers and healthcare professionals in rural Kerry. In this respect, the findings were precluded from generalisation. Similarly, the limitations of the study discussed in Section 3.7.2 and Section 6.4 need to be taken into consideration when attempting to draw conclusions from the study’s findings. However, despite the limitations of the study, the findings revealed several important contributions to existing literature.

The key quantitative findings showed that the majority of male farmers in Kerry perceived the farm challenges presented in the survey caused them stress. It showed that while, most farmers attended their GP in the last twelve months, a significant number of farmers had experienced significant delays before accessing the services and other farmers never attended their GP, even when they believed they should have done so. Two of the main reasons male farmers either delayed or never accessed the services was because they either ignored the issue or they perceived the issue was not serious. In this respect, the quantitative findings found male farmers’ perceptions of the seriousness of a health issue directly influenced their help seeking practices. The quantitative findings also revealed that although the majority of male farmers attended their GP in the last twelve months, thought about their health at varying levels, and
wanted to improve their lifestyles, there was still a significant number of farmers that appeared to lack health consciousness and awareness about their health practices. In this sense, the quantitative study found there was a general consensus among male farmers that demonstrated a lack ownership of their health.

The key qualitative findings found that healthcare professionals found both current service provision and farmers themselves posed challenges, when they attempted to engage or maintain engagement with farmers in relation to preventative health measures. The interviews revealed current service provision was problematic in relation to male farmers, because it relied on them to access the services. It identified that a one-size-fits-all approach to male farmers' health meant male farmers were a challenge for participants to engage with in their daily work. Participants also found male farmers delayed in seeking help, and some suggested this was because they ignored health issues or were reluctant to access services. However, others found that in many instances, male farmers had inaccurate perceptions of the seriousness of a health issue, and this meant they often presented (too) late with the onset of an illness. The key qualitative findings also revealed that participants found male farmers were a challenge because they had a 'quick fix attitude' to their health and disengaged from the services once they perceived the issue was resolved. Finally, there was a strong consensus among healthcare professionals that male farmers 'lacked ownership' for their health and relied heavily on a 'female significant other' to take responsibility for their health, and older male farmers were recognised by the majority of participants as of most concern and at most risk. Findings from both studies revealed discrepancies in perceptions between farmers and healthcare professionals. The meaning and implications of both data sets are integrated and discussed in relation to the research questions in the next chapter.
Chapter 5: Discussion

5.1 Introduction
The purpose of this chapter is to situate and discuss the meaning of the research findings in relation to the research aims and objectives of the study with reference to existing literature. To revisit, the main aim was to examine male farmers’ health beliefs, attitudes, and practices in rural Kerry and to explore healthcare professionals’ insights of male farmers’ health beliefs, attitudes and practices. It also sought to explore the effects of wider issues on male farmers’ health, and to investigate if male farmers were a ‘hard to reach’ group in terms of responsibility for their health, and their use of the health services (Van Doorn, Richardson and Osborne, 2014). This chapter remains consistent with the mixed methodological design of the study, and integrates the findings from both phases of the research project. It presents the main findings in relation to the research questions set out at the beginning of the study and draws from both the quantitative and qualitative findings to discuss the meaning of the findings when integrated, and with reference to the existing literature presented in chapter 2. It also draws on additional literature, where new areas of interest arose through the explorative nature of the qualitative interviews with healthcare professionals.

While participants did not refer to gender or manliness, it was implied in the responses of both male farmers and healthcare professionals throughout this research, and hence, whether or not they were conscious of it, gender directly and indirectly, influenced some male farmers health beliefs, attitudes, and practices. In this respect, the key findings throughout this chapter draws on masculine discourse to contextualise some of the study’s findings. Finally, the attitudes and beliefs of male farmers are intertwined with all aspects of their lives and, therefore, are enmeshed in all of the study’s findings and
in all the research questions. Although, in reality these findings could be have been presented under more than one research question, to minimise repetition each research question presents a certain aspect of the findings in relation to male farmers' health beliefs, attitudes, and practices. The following section presents the study's key findings in accordance with the research questions set out in chapter one, and discusses the meaning of the research findings in relation to existing literature.

5.1.1 How do farmers perceive and define their health?
In the first quantitative phase of this mixed methodological study, there was a strong consensus among farmers that good health involved physical fitness (45.6%). Others defined it as the ability to work (16.3%), good mental health (17.7%) and to be without disease or illness (18.4%). This finding provided insight into how farmers perceived good health and it highlighted the attributes they used to define what good health meant to them. This finding resonated with existing literature, because it showed that male farmers' individual perspectives added more depth and understanding to the term health (Blaxter, 1990; Hughner and Kleine, 2004; Robertson, 2006). The significance of this finding is evident in other studies (Oliffe, et al., 2015; Hervik, 2016), which found that individuals' perspectives had a significant influence on their personal behaviours.

The quantitative findings established that the majority (87.1%) of male farmers perceived their health as excellent to very good. It is important to consider this finding in light of the fact, that men tend to perceive the quality of their health as better than it actually is (Mercer-Grant, et al., 2011; Hervik, 2016). For example, although one farmer had multiple types of cancer, he believed his health was excellent. He explained that, as long as he could get up in the morning and go to the livestock mart, he was healthy. This finding is consistent with other studies, such as Shadbolt, Barresi and Craft (2002) who found 62% of patients considered themselves to be in good health, despite having advanced incurable cancer. Similarly, Storey, et al. (2014) found that according to Body Mass Index (BMI), 60% of Irish farmers were overweight or obese, but just 27% of these farmers believed they were too heavy. In this light, Paterson's (2001) study supported this finding, as she found individuals interpret and respond to health and illness based on their 'perception of reality, not the reality itself' (p. 23). In this respect, it appears
that lay perceptions of health were important to understand, because regardless of actual health status, it was male farmers’ perceptions of their health status that determined concomitant behaviours and practices. By comparison, in the qualitative phase of the study, many healthcare professionals expressed mixed views on male farmers’ health, as some believed they were well adjusted and attended their GP ‘just like anyone else’, while other healthcare professionals reported farmers neglected their health. This finding resonates with Robertson’s (2006) study which found healthcare professionals perceptions of men’s health, markedly contrasted with the lay conceptualisations of the men in the study. In this sense, this study identified a gap existed between healthcare professionals and male farmers lay conceptualisations of health and health practices.

5.1.2 What are farmers’ beliefs and attitudes about their health?
In this study, many (45.6%) farmers equated good health to physical fitness, and this reflected the value they placed on this attribute to define their health. This finding is consistent with other studies (Calnan, 1987; Richardson, 2004; Amshoff and Reed, 2005; Robertson, 2006; Smith, et al., 2008; Verdonk, Seesing and Rijk, 2010) which found health was defined as synonymous with work performance and the functional ability to carry out everyday tasks. It was also commonly related to fitness, physical strength, and the absence of illness. This finding is most similar to Richardson’s (2004) research, which found that farmers placed the utmost value on physical attributes such as physical strength and their ability to work to define their health. In addition, Connell (1995) found men who believed in this ideology perceived their physical bodies as a portrayal of their masculinity, because they believed if they were physically fit and strong it made them tough, resistant to disease, and able for work. Other research (Ni Laoire, 2005; Shortall, 2014; Roy, et al., 2015) found that this idealised and valorised notion of masculinity was strongly evident in rural men, such as farmers because they believed physical strength signified notions of independence, stoicism, and self-reliance and reinforced a dominant form of masculine identity (Ni Laoire, 2005; Cassidy, 2014). In this study, farmers in Kerry appeared to self-survey their health based on their physical bodies, and the quantitative findings revealed that, as long as they could work without impediment, they perceived themselves as being in good health. In this respect, this finding resonates with other
studies that found men used their bodies to monitor their health status (Robertson, 2006; Smith, et al., 2008). This finding is most comparable to Cassidy’s (2014) study, which found that male farmers’ bodies played a significant role in the social construction of rural hegemonic masculinities, because they used their bodies as a symbol of empowerment, to legitimately display masculine qualities such as toughness, strength and power, through manual labour.

The qualitative findings suggest some farmers placed more value on their work than on their health. According to healthcare professionals’ accounts of engaging with farmers, many reported that farmers worked too hard and compromised their health due to farm work. Participants described situations where farmers were unable to work but continued to do so, without considering the impact on their health. For instance, participant seven provided an ample example of farmers placing more value on their work than their health when he explained that two farmers he had engaged with through the health services, continued to work despite having two crutches each. Other participants reported that despite professional advice, many farmers continued to work with illness and injuries rather than take a break from farming. In the quantitative phase of the study, one of the farmers expressed the value he placed on his work over his health when he said that, ‘if I thought about my health I would get nothing done’. This finding is supported in the literature, for instance, Amshoff and Reed (2005), in a study of over 700 farmers in the United States, found that many farmers placed more value on their land than their personal health. Similarly, Oliffe, et al. (2015) and Caddick, et al. (2016) found work performance and productivity dictated men’s health practices such as healthy eating and exercise.

By comparison in the qualitative phase of the study, healthcare professionals reported that one of the main issues for most farmers was that ‘they do not know what to do’ if they were not farming. This finding mirrors the quantitative findings, in that over 90% of farmers expressed their love of farming, and they explained that, despite the challenges in farming, they knew ‘no other way of life....and were born and bred to be a farmer’. Other studies reported similar findings, as Silvasti (2003) and Cassidy (2014).
found farm families had a significant influence on their children and, in particular, their sons. Price and Evans (2009) drew on the theory of socialisation to explain the influence of farm families on their sons’ attitudes and beliefs about what it was to be a farmer. They found that the title ‘farmer’ became tightly bound to their identity, to the extent that they did not know any other way of life. In this respect, the theory of socialisation provides a more nuanced account of the internal processes that may lead some farmers to place more value on their work, than on their health.

The majority of farmers (63.3%, n=93) believed they always got enough exercise on the farm, because they perceived farm work was an adequate form of exercise. For example, when farmers were asked if they exercised off the farm, one farmer responded, ‘sure I get enough exercise on the farm. I am working all day’. In addition, upon statistical analysis of the quantitative data, it showed that farmers who earned the least from farming perceived the need to exercise off farm more than those who earned the most from farming. Therefore, since dairy farmers earned the most from farming, the findings suggested dairy farmers were more likely to perceive farm work as an adequate form of exercise.

The qualitative findings mirror the quantitative findings, as healthcare professionals clearly articulated that their perceptions of healthy lifestyle practices were quite different to those of some of the farmers they engaged with, through the health services. For example, participant eight’s perception of exercise contrasted significantly with farmers’ perception of exercise,

‘...I suppose that is one of the things that I definitely do find when clients come in from the farming background. They look on farming as being on their feet all day long and, do not get me wrong, I know that it is hard work, but they feel that it is part of their physical activity, where as it is not. They have to realise that you have to increase your heart rate, you have to feel that pull on the calories, as well and the muscles. Sometimes, they may get that in their work their doing, but sometimes they might not, and even just opening up that kind of idea and suggestion to them...’

Previous studies support this finding, as Buckley and O’ Tuama (2010), Mercer-Grant, et al. (2011) and Oliffe, et al. (2015) found that men, including farmers, equated physical
work to adequate exercise. For example, Mercer-Grant, et al.'s (2011, p. 244) study found farmers perceived themselves as physically fit because they believed their farm work was an adequate form of exercise, and they equally perceived they had a healthy lifestyle because they worked outdoors in the 'fresh air'. However, Mercer-Grant, et al. (2011) found, that as a group, farmers had a higher burden of chronic illness and higher rates of morbidity and mortality than the general population in Australia. In this light, this study finding identifies that a gap exists between male farmers and healthcare professionals’ perceptions of what constitutes good health and healthy lifestyle practices. It also illuminates the significant influence male farmers perceptions of their health had on their concomitant health behaviours and practices.

The survey found that nearly half (44.9%) of farmers in this study never thought about their health in relation to their dietary choices. This finding suggests that many farmers demonstrated low levels of health consciousness in their attitudes towards a healthy diet. Yet, some (23.8%, n=35) farmers expressed the desire to 'eat less junk food/sugary foods' and wanted 'to start eating the right food' to improve their diet and exercise levels. This implies that many farmers were aware that their diets were poor and their exercise levels were not what they should be. The importance of farmers thinking about their health in relation to their lifestyle practices is evident in the literature. For example, studies such as Long and Mongan (2014) found that individuals that thought about their health behaviours and practices, in accordance with recommended guidelines had better health outcomes. The quantitative findings mirror the qualitative findings, because the healthcare professionals reported that many farmers they engaged with had unhealthy lifestyle practices. They reported that older, single male farmers in particular had poor diets, and participant seven explained that, dietary choices were based on convenience food and whatever was the easiest for them to 'cook up'. The literature supported the study's findings, as other studies such as Oliffe, et al. (2015) and Caddick, et al. (2016) found that, although many of the men in their study were aware of what constituted a healthy diet, their work was a strong predictor of the food they chose to eat. Given, some farmers in Kerry placed so much value on their work, it is reasonable to suggest that it also influenced their dietary practices. In the present study, diet and exercise were found to be the lifestyle practices that farmers struggled with the
most, whereas lifestyle practices such as smoking and drinking alcohol appear to be less of an issue. For example, the majority (84.4%) of farmers said they did not smoke and a third (36.7%) of farmers reported they were non-drinkers. This finding relates to existing literature, as the study found that smoking rates among farmers was well below the national average and was indicative of the significant reduction in the number of individuals that smoked in Ireland (Hickey and Evans, 2015).

5.1.3 What are healthcare professionals’ insights of male farmers’ health beliefs, attitudes and practices in rural Kerry?

The survey found that some male farmers lacked ownership of their health. There was a strong consensus among farmers that health is something that cannot be owned, rather they believed health was something given to them for a certain period, and they referred to the futility of their health as ‘when it is gone, it is gone’. This finding was unexpected, but was similar to existing research as both Richardson (2010) and Robertson (2006) found that some men related to their health as predetermined and outside of their control. While, both studies explored men’s understandings of their health, this study’s finding is most similar to Richardson’s (2010) study which found men either legitimatised their lack of concern for their health, perceived health as predetermined and outside of their control or divested responsibility for their health to women. This resonates with the qualitative findings, as many healthcare professionals described that farmers lacked ownership of their health because they depended on others to take responsibility for their health. For instance, participant nine explained that, from her experiences with farmers, they had a ‘luck of the draw’ attitude to their health. While, participant three referred to male farmers that he had engaged with, as ‘passive recipients’ because they had to depend on others to tell them what to do in relation to their health.

Qualitative findings produced conflicting data in relation to healthcare professionals’ role in ‘telling farmers what to do’. For example, participant six reported that male farmers were ‘willing to do what we tell them’ but in comparison, the quantitative phase of the study showed the ineffectiveness of telling male farmers what to do in relation to their health. For instance, one farmer explained ‘Going to the doctor is a waste of time
because he will tell me to lose five stone, but sure, I know that already'. This not only suggests that telling this man what to do in terms of his health was unhelpful and unwelcome, but it also indicated that he would not get what he needed from the visit; which was to be given support and information on how to lose weight. This quantitative finding is congruent with qualitative findings, as participant three highlighted the ineffectiveness of an authoritarian or paternalistic approach with male farmers. He explained that male farmers did not respond well to being told ‘You must come to this for the next six weeks .... you must do this .......... you must do that...’ Instead, he argued that healthcare professionals should identify what would work best for male farmers, and he suggested that they would respond better to a ‘collaborative approach’.

The literature review noted the positive role of women in men’s health. In this study, healthcare professionals reported that many male farmers relied heavily on a ‘female significant other’ in relation to their health. They discussed experiences that showed that, in the absence of a ‘female significant other’, many farmers lacked the ability to take care of their own health. Participant three described a ‘female significant other’ in a farmers life as being their ‘wife, daughter, mother, girlfriend, or a sister’. This finding is similar to existing literature, as several studies found men divested responsibility for their health to women (O’ Brien, Hunt and Hart, 2005; Smith, et al., 2008; Buckley and O’ Tuama, 2010; Garcia, 2013; Stough-Hunter, 2015). For example, Courtenay (2000a), Buckley and O’ Tuama (2010) and Verdonk, Seesing and Rijk (2010) found that many men outsourced self-care to their female partners because they believed this allowed them to take care of their health without threatening their masculinity. However, this study finding is most comparable to Garcia’s, (2013, p. 149) study, which found men learned from an early age to depend on women to take responsibility for their health. Garcia (2013) found men were ‘spared’ from the day to day responsibilities of taking care of themselves, because domestic duties and nurturing roles were considered effeminate and inappropriate for boys to learn, and she concluded that men lacked the basic life skills to take care of themselves. In this respect, Garcia’s (2013) findings, resonates with this study’s finding, because it showed that in the absence of a ‘female significant other’, some farmers lacked the ability to take care of their own health. This
study finding also provides context to the concept of male farmers ‘not owning their own health’.

At first glance, it appeared that healthcare professionals provided contradictory statements in relation to farmers’ responsibility for their health. For example, healthcare professionals reported that farmers ‘lacked ownership for their health’ and ‘had to be told what to do’, but in other instances, they reported that farmers ‘did not like to be told what to do’. However, a more nuanced analysis of male farmers’ responsibility for their health revealed a more complex conceptualisation of male farmers’ responsibility for their health. Literature supported the study’s findings, as previous studies showed that there were two conflicting discourses, in relation to men’s responsibility for their health. Studies such as Robertson (2006) found that men desired to be responsible for their health but struggled with the subsequent delivery of that responsibility. For instance, Richardson (2010, p. 423) found that although men claimed to be responsible for their health, it did not always show in their actions. By contrast, a number of other studies found that men did not want health to control their whole lives, and so they struggled to balance control over their actions with responsibility for their health (Robertson, 2006; Stough-Hunter, 2015). In this respect, it appears male farmers may allow a ‘female significant other’ to tell them that they must go to the doctor, but they may resist being told what to do by healthcare professionals, if they perceive the advice to be excessive and taking away their control, over their lives. In this sense, this study finding showed that farmers desired to be responsible for their health but some farmers struggled with the subsequent delivery of that responsibility. It also showed that male gendered discourse literature, provided context to understand the influence of gender on some farmers’ health beliefs, attitudes, and practices.

5.1.4 Do farmers access health services? If not, why not?
The quantitative phase of the study challenged the notion that men, such as male farmers do not access the health services because the study found that the majority

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44 In this chapter, the use of the word ‘some farmers’ (37.4%, n=56) is used to denote the total number of farmers that the study found did not access services, even when they believed they should have (13.6%, n=21) and farmers who initially delayed before accessing the health services (n=35, 23.8%).
(61.2%) of farmers' attended their GP in the last twelve months. In comparison, the qualitative phase of the study found that many healthcare professionals believed farmers were very reluctant to seek help and only attended their GP if there was 'something very wrong with them'. For example, participant five reported some farmers had to be 'pushed in the door' to their GP. Although, the qualitative findings appeared to contradict the quantitative findings, the study found healthcare professionals' experiences of engaging with male farmers was equally as valid. The quantitative findings showed that some farmers who took part in the study did not access their GP even when they believed they should have done so, and other farmers delayed before they sought help. The study found that more than one tenth (13.6%, n=21) of the participants never sought help, but they believed they should have done so. The three main reasons farmers did not seek help predominantly related to how farmers perceived the health issue. For example, these farmers responded that (i) they ignored the symptoms; (ii) they did not think the issue was serious or (iii) they had a fear of the diagnosis.

5.1.5 Do farmers delay in accessing health services? If they do delay, why so?
The survey findings showed that nearly a quarter (23.8%, n=35) of farmers experienced an initial delay before they accessed the health services. The three main reasons why farmers said they delayed seeking help was that (i) they did not think the health issue was serious; (ii) they ignored the symptoms or (iii) due to a lack of time. The qualitative findings mirrors the quantitative findings, as the healthcare professionals' experiences with male farmers provided additional insight into male farmers' beliefs and attitudes towards their help seeking practices. They reported that farmers 'downplayed' or ignored a health issue for as long as they could tolerate it, before they sought help. For example, participant six provided an example of some farmers' rationales for their delayed help seeking practices,

'...why did it get this far? .... routine answer is 'oh, sure, I thought it was only a little cut and that it would go away after a few days, and then it did not and I tried a bit of Dettol on it, or I tried this on it or I tried that on it and then it was not.... and then it was getting sore and then it was getting painful and then I said I had better go'.
This finding is supported by several studies (O’Brien, Hunt and Hart, 2005; Buckley and O’Tuama, 2010; Stough-Hunter, 2015) which found that the majority of men perceived showing concern to ‘minor’ symptoms was a sign of weakness and subsequently, they did not complain or go to the doctor with issues they perceived as ‘minor’. In this sense, this study suggests that some farmers may not have sought help or at least initially delayed, because they may have been socialised from a young age to downplay and suppress a health issue for as long as they could tolerate it, before they believed that it was serious enough to seek help. This study found that a smaller cohort of farmers lacked the ability to know when a health issue was serious enough to warrant a GP visit. This finding is supported by existing literature as O’Brien, Hunt and Hart (2005) found that men that delayed or avoided treatment for symptoms they perceived to be ‘minor’, may actually have had more serious symptoms. They found they may have trivialised or overlooked their symptoms, because they were uncertain what symptoms constituted a serious issue. In this respect, this study’s finding was most comparable to O’Brien, Hunt and Hart’s (2005) study, because it raises an important concern about men’s perceptions of the seriousness of a health issue and equally, the significant influence this perception has on their concomitant health behaviours, practices and outcomes.

5.1.6 What are the key factors that make farmers a ‘hard to reach’ group and what strategies can be used to overcome these factors?

The quantitative phase of the study found that farmers may be considered a ‘hard to reach’ group because some of them did not access services and others did not access services in a timely manner and presented (too) late with the onset of an illness. For example, the quantitative findings found two of the main reasons farmers either delayed, or did not seek help for a health issue was because they ignored the symptoms or they did not think the health issue was serious. This finding mirrors the qualitative findings, as healthcare professionals reported that many of the farmers they had engaged with, had either ignored the symptoms or downplayed the health issue. They found that many farmers only sought help when they could no longer tolerate the health issue and it began to interfere with their lives. Therefore, many healthcare professionals believed farmers were a ‘challenging group’ to engage with because ‘they did not make things easy’ and they often presented when things were ‘well advanced’.

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Healthcare professionals also reported farmers as a 'hard to reach' group because current service provision relied on farmers to access their GP. In this regard, they reported that male farmers who did not access the services or who presented (too) late in the onset of an illness were a challenge to the health services. For example, participant eight argued ‘how do you engage with someone who wants to be isolated?’ Many of the healthcare professionals found these farmers, to be disinterested or to have a ‘luck of the draw attitude’ to their health and subsequently, referred to them as a ‘hard to reach’ group. By comparison, from the farmers’ perspective, some farmers did not know when a health issue warranted a GP visit and only presented when they had a health crisis or presented when it was (too) late in the onset of an illness. However, the quantitative phase of the study found that the majority of farmers did access the health services. It also found that the main reasons that farmers ignored their symptoms or did not think a health issue was serious was due to a lack of health consciousness, inaccurate perceptions of the seriousness of a health issue and the inability to know when a health issue warranted a GP visit. Therefore, these quantitative findings challenged the notion that male farmers did not access services, or access services (too) late because they were disinterested in their health. The study found healthcare professionals reasons for defining male farmers as a ‘hard to reach’ or ‘challenging’ group, significantly contrasted with the actual reasons why many farmers did not access the services or presented (too) late to their GP. In this respect, the study found that some farmers’ beliefs and attitudes towards their health directly influenced their help seeking practices. It equally found an alternative meaning for the term ‘hard to reach’ in relation to male farmers in Kerry.

In the quantitative phase of the study, some farmers demonstrated low levels of health consciousness. Therefore, it was imperative to examine healthcare professionals’ engagement with male farmers through the health services, to identify the current service provision available to male farmers in Kerry. The study found that there was a one-size-fits-all approach to service provision for male farmers in Kerry. In this respect, current service provision in Kerry lacked male targeted and culturally appropriate interventions to address the needs of male farmers. For example, during interviews with healthcare professionals it was evident that their main engagement with farmers
through the health services, primarily focused on the treatment and management of a health crisis. The study identified current service provision for male farmers in Kerry was inconvenient and inaccessible for many farmers. For example, one of the healthcare professionals found it was more difficult for farmers to access the health services in comparison to other occupations, because they had to leave their farms unattended, and often arrived to clinics for wound dressings, unwashed and in their work clothes.

To date, the most notable targeted intervention for male farmers in Ireland is in the form of FHH checks at the livestock marts. This initiative is proving successful in promoting farmers engagement with their health because it is accessible and thus, acceptable to farmers. The initiative reflects the advantages of employing gender specific and culturally appropriate male-targeted interventions in the community setting. However, as already discussed in previous chapters, they are ‘once-off’ events and according to Evans, et al. (2009b) have minimal effect on changing lifestyles behaviours, and still do not address the cause of their poor health. In this respect, male farmers in Kerry require more regular and consistent interventions in the community to address the issues identified in this study, such as some farmers’ poor help seeking practices, inaccurate perceptions of the seriousness of health issues and low levels of health consciousness in their everyday lives.

Healthcare professionals also reported it was a challenge to keep farmers engaged in the health services, once they perceived their health issue was resolved. Many participants expressed that the farmers they had engaged with, had a ‘quick fix attitude’ to their health. They explained farmers disengaged from the services and did not attend follow up appointments when they believed the issue was no longer an issue for them. This finding is similar to other studies, such as Robertson (2006) which found that many men only thought about their health when illness interrupted their daily lives. Existing research also reflects the quantitative findings, in that farmers’ perceptions of good health hinged on their ability to self-survey their physical bodies and their ability to work. Both phases of this study suggest that, for some of these farmers, when the health issue no longer interfered with their daily lives, these men perceived the issue as
resolved and believed there was no need for a follow up. Therefore, this study found that some farmers’ perceptions about their health and the seriousness of a health issue directly influenced their concomitant health behaviours and practices including their engagement with the health services.

The quantitative phase of the study also found that strategies such as respect for farmers’ time, not crossing farmers’ boundaries and understanding the characteristics of the group (cultural awareness) promoted farmers’ engagement in the research. This finding is similar to several other studies, which found a gender specific and culturally appropriate approach proved successful to engage with men such as male farmers (Leishman and Dalziel, 2012; Pringle, McKenna and Zwolinsky, 2013; Carroll, Kirwan and Lambe, 2014; Hunt, et al., 2014; Lefowich, Richardson and Robertson, 2015; Oliffe, et al., 2015; Robertson and Baker, 2017).

5.1.7 Do wider issues influence farmers’ health and/or health beliefs and attitudes?
Dahlgren and Whitehead’s (1991) SDOH framework was drawn upon to understand the influence of wider determinants on male farmers health beliefs, attitudes and practices in Kerry. In this respect, in the quantitative phase of the study, nearly all farmers expressed that wider determinants such as social, environmental and economic factors caused them stress. The study found that farmers working environment had significantly changed in recent years and many farmers believed these changes caused them stress. For instance, the majority of farmers reported there was a loss of community among farmers compared to previous generations, and this sense of loss caused them stress. This finding is reflected in existing literature as Shortall (2014) found that over the last twenty years, changes in farming such as increased mechanisation reduced the need for additional farm labourers, and subsequently, social contact between farmers and the farming community significantly declined. Similar findings were noted in the quantitative phase of the study, as the majority of farmers in Kerry were uncomfortable speaking about mental health issues and issues related to social isolation such as feeling lonely. By comparison, in the qualitative phase of the study, healthcare professionals reported that male farmers were reluctant to express issues related to mental health. This reflects existing research, as Alston and Kent (2008) found farmers were
uncomfortable speaking about their emotional and mental health difficulties, because they placed more value on keeping up the appearance of being strong and independent. In this respect, this study suggests that gender did influence male farmers’ ability to speak about the impact of wider determinants such as rural isolation, on their mental health, and can account for many farmers not feeling comfortable speaking about topics such as loneliness, during the pilot study.

The study found that other wider determinants such as increased levels of paperwork, loss of control over the running of their farms by external forces, and financial pressures caused farmers stress. This finding is similar to existing literature, which found increased levels of competitiveness, regulations, and administration caused farmers stress (Ni Laoire, 2005; Shortall, 2014; Van Doorn, Richardson and Osborne, 2014; Furey, et al., 2016). For example, Meijboom and Stafleu, (2015) found that less control, but more responsibility in farming caused farmers stress because farmers perceived they had lost their voice in their role as independent agricultural producers. The study also found that unstable incomes caused the majority of farmers stress (85.7%), and some (19%, n=28) farmers reported that financial stress affected their health. The qualitative findings reflected the quantitative results, as many of the healthcare professionals’ reported that farmers experienced stress related to farming issues such as financial pressures. This finding is supported by existing literature which showed that financial worry caused stress in farming (Ni Laoire, 2005; Coldwell, 2007; Alston and Kent, 2008; Price and Evans, 2009; Shortall, 2014; Furey, et al., 2016). In this respect, the study’s findings revealed farmers’ perceived that wider determinants directly related to farming such as unstable incomes, financial pressures, administration, regulations, loss of autonomy and loss of community caused them stress.

5.2 The influence of different age categories on farmers’ perceptions of the causes of stress in farming
There were notable distinctions evident across three different age categories of male farmers in relation to perceived causes of stress in farming in Kerry. The following section presents these differences and refers to the literature to provide context to the study’s findings.
Older single farmers
The majority of farmers who took part in the study were in their fifties and sixties. This was not surprising, as studies such as Leonard, et al. (2017) found that farmers represented an ageing population and they found there was a sharp decline in the number of younger males entering farming. Other studies found this trend was evident at a local level (Meredith, 2015) a national level (Hennessy and Moran, 2016) and a global level (Leonard, et al., 2017). Both farmers and healthcare professionals reported that older, single farmers that lived on their own were the group at most risk of adverse health outcomes.

In the quantitative phase of the study, statistical analysis of the quantitative data revealed that perceived causes of stress were higher in the older male farmers (above 60) than those under forty years old. The healthcare professionals reported one of the reasons older single farmers were of most concern was because they were more likely to have no one to take care of them, and had no one to work the land. Consequently, many healthcare professionals found older farmers tended to work too hard, to the detriment of their health. For example, participant seven found that many older farmers' health had deteriorated because they failed to secure farm succession. This finding resonates with the quantitative phase of the study, which highlighted that one third (33.3%) of farmers had no successor secured to run their farms. This finding is also consistent with existing literature, as many studies have identified farm succession as an issue for older male farmers (Mercer-Grant, et al., 2011; Shortall, 2014; Furey, et al., 2016; Leonard, et al., 2017). Similar to this study's findings, other literature (Amshoff and Reed, 2005; Cleary, Feeney and Macken-Walsh, 2012; Roy, et al., 2013) found that older farmers' health was of most concern, because they continued to work into old age despite their ability to do so. Older male farmers (above 60) also expressed higher confidence in responsibility for their own-health compared to farmers in the mid-range age category (40-60). This finding is similar to existing literature, as Richardson (2004) found that many men experienced vulnerability and heightened awareness about their health, as they got older. In comparison, other studies found that some men only became responsible for their health as they increased in age or because they had
experienced a health crisis (Robertson, 2006). In this respect, gendered discourse literature supports the study’s findings, in that, the study has shown that the level of thought that male farmers placed on their health influenced their concomitant attitudes, beliefs, and practices.

5.2.2 Middle-aged farmers
Statistical analysis of the quantitative data found that middle-aged farmers (40-60 age group) expressed higher perceived causes of stress levels in relation to paperwork and loss of community in comparison to younger male farmers (under 40). This finding suggested that middle-aged farmers were struggling more with the changes and transitions in farming. As previously mentioned, one of the main concerns from both sets of participants related to single male farmers who lived alone. However, statistical analysis of the data revealed that farmers living with partners’ experienced higher perceived causes of stress levels when compared to farmers without partners. It is probable, that farmers with partners had higher perceived causes of stress in comparison to single farmers, due to family commitments and the associated financial responsibilities (Oliffe, et al., 2015; Roy, et al., 2015). Ni Laoire (2005, p. 342) found that male farmers were socialised from a young age to believe their main role as a man, was to be a good provider for their family. Other studies showed that men’s identity and psychological wellbeing was attached to their role as breadwinner (Oliffe, et al., 2015). Therefore, farmers often place significant value on their ability to work and earn a living, and struggle to meet other family obligations. The strong association farmers exhibit between their ability to earn a living and their sense of identity, exposes farmers as vulnerable in times of financial insecurities. For example, Coldwell (2007) found farmers believed that if they failed as a farmer, they had failed as a man. Similarly, Ni Laoire (2005) found that reduced earnings from farming threatened male farmers’ identity, and was a significant contributor to farmers’ stress. Therefore, the study’s findings reflect the existing literature, and provided insight of farmers’ beliefs and attitudes towards the causes of stress in farming, and the impact these had on their health, particularly for men of different ages and at different life stages. Lastly, the 40-60 age group expressed less confidence in responsibility for their own-health in comparison to older farmers. This finding indicates that this age group may require more engagement from the health
services to prevent the onset of more serious illnesses associated with unhealthy lifestyle diseases in older age.

5.2.3 Younger farmers
Finally, statistical analysis of the quantitative data revealed younger male farmers expressed less perceived causes of stress in comparison to older farmers (above 60), and appeared not to be affected in the same way by the transitions in farming in comparison to middle-aged farmers (40-60). The quantitative data also found that the majority (84.2%) of farmers that lived with their parents were in this age category. As a result, the findings suggest that since they live at home with their parents, they did not experience the same financial stress as the middle-aged group. Similarly, these farmers did not experience the same struggle with paperwork or loss of community as the middle-aged farmers. Overall, statistical analysis of the quantitative data found there was distinct differences in farmers' perceptions of causes of stress in farming between three different age groups.

5.3 Chapter conclusion
This chapter presented the key findings from both the quantitative and qualitative phases of this mixed methodological study. It integrated both data sets to provide a more nuanced understanding of the health beliefs, attitudes, and practices of male farmers in rural Kerry. To summarise, the study found an alternative and a more nuanced meaning for the term 'hard to reach' in relation to male farmers use of the health services in Kerry. Some farmers in Kerry were found to be 'hard to reach', but not for the reasons reported by the healthcare professionals or cited in the literature. Rather, the study identified some farmers were 'hard to reach' because they had inaccurate perceptions of the seriousness of a health issue and lacked the ability to know when a health issue warranted a GP visit. In this respect, the study concluded that some farmers' health beliefs and attitudes directly influenced their help seeking practices.

Secondly, the study found that healthcare professionals' perceptions of healthy lifestyle practices were quite different to those of some of the farmers they engaged with,
through the health services. Farmers believed they were healthy as long as they had the ability to work without impediment and some farmers struggled to make healthy lifestyle choices in relation to diet and exercise. Both farmers and healthcare professionals differed significantly on what constituted as adequate exercise. Many farmers believed they gained adequate exercise from doing their farm work, while healthcare professions reported that farm work in most cases did not meet the recommended guidelines for daily exercise, and they believed some farmers perceptions of exercise were inaccurate and did not meet recommend guidelines. The study concluded farmers’ perceptions about their health influenced their concomitant health behaviours and practices.

The third key finding showed that farmers struggled with responsibility for their health and two conflicting discourses existed in relation to male farmers’ responsibility for their health. The study found although the majority of male farmers claimed they were responsible for their health, it was not always reflected in their actions particularly, in relation to diet and exercise. Therefore, the study concluded that farmers desired to be responsible for their health, but some farmers struggled with the subsequent delivery of that responsibility.

Fourthly, the study revealed that some farmers lacked ownership of their health. Some farmers appeared to perceive health as something that was not theirs to own, and considered it, as separate to them and thus, outside of their control. In comparison, healthcare professionals referred to male farmers as ‘passive recipients’ because they ‘had to be told what to do’ in relation to their health.

The fifth key finding showed that some male farmers relied heavily on a female such as a wife, mother, daughter, or sister to take responsibility for their health. The healthcare professionals reported that some farmers struggled to take care of their own health in the absence of a ‘female significant other’. In this respect, the study concluded some farmers in Kerry may lack of ownership for their health due to an over reliance on a ‘female significant other’.
Farmers working environment has significantly changed in recent years and the sixth key finding showed farmers perceived wider determinants directly related to farming caused them stress. Many farmers’ perceived issues related to unstable incomes, financial pressures, administration, regulations, loss of autonomy and community caused them stress, and the literature provided strong empirical evidence that these had a negative impact on farmers’ physical and mental health. The study also showed that some farmers placed more value on their work than they did on their health, and healthcare professionals provided several accounts of where farmers compromised their health due to farm work.

The seventh key finding showed that there was a one-size-fits-all approach to service provision for male farmers in Kerry. In this respect, current service provision in Kerry lacked male targeted and culturally appropriate interventions to address the needs of male farmers. The study found male farmers in Kerry required more regular and consistent interventions in the community to address the health issues identified in the study, such as some farmers’ poor help seeking practices, inaccurate perceptions of the seriousness of health issues and low levels of health consciousness in their everyday lives. Therefore, the study found that some farmers’ perceptions about their health and the seriousness of a health issue directly influenced their concomitant health behaviours and practices including their engagement with the health services. The quantitative phase of the study also found strategies such as respect for farmers’ time, not crossing farmers’ boundaries and understanding the characteristics of the group (cultural awareness) promoted farmers’ engagement in the research. In this respect, the key findings of the study provided several insights into male farmers’ health beliefs and attitudes, and in several instances, the findings showed farmers’ health beliefs and attitudes directly influenced their concomitant health behaviours and practices. The next and final chapter of the thesis concludes the entire study, and provides recommendations for future practice, policy and research based on the study findings.
6.1 Introduction
This chapter summarises the research study and explores the contribution of the study's findings to the existing literature. The overarching contribution of the study lies in its ability to prove male farmers health beliefs and attitudes directly influenced their concomitant behaviours and practices. The study shows some male farmers inaccurate perceptions of their health, health issues, and health practices resonate with hegemonic masculine discourse. The thesis concludes that although the study found some male farmers held inaccurate perceptions of their health, as long as they believed their perceptions of their health, health issues, health practices were accurate, their health damaging behaviours remained unchanged. In this respect, a concerted effort is required from the health services in Kerry to address some male farmers' health damaging behaviours and practices and to provide a supportive environment for them to develop behaviours and practices that promote good health. As the chapter progresses it outlines the study's limitations, and based on the study's key findings, it provides recommendations for practice, policy and further research, with a specific focus in the area of behavioural research to improve male farmers health in Ireland.

6.2 Study summary
The main objective of this study was to examine male farmers' health beliefs and attitudes, and to determine, if their beliefs and attitudes influenced their concomitant health behaviours and practices in Kerry. In Ireland, several studies (Evans, et al., 2009b; Smyth, et al., 2012; Storey, et al., 2014; Van Doorn, Richardson and Osborne, 2014) found farmers poor health status was mainly attributed to their lifestyle behaviours and practices. A well cited and seminal study by Courtenay (2000b) found that men's health beliefs and attitudes directly influenced their concomitant health behaviours and
practices. However, there was a lack of behavioural research available in relation to male farmers in Ireland, and subsequently, this study was borne out of the need to address a significant gap in the literature.

By contrast, a dominant discourse within existing literature was the negative impact wider issues in farming had on farmers’ health and wellbeing. However, as previously discussed throughout the thesis, few studies employed a holistic research approach to the health of male farmers, or considered the accumulative influence wider issues in farming had on their health behaviours and practices. This study considered such a narrow focus on male farmers health was a limitation of these studies, and contributed further to the gaps in the literature. Therefore, this study amalgamated literature on the wider issues in farming, to determine if farmers in Kerry perceived the same issues affected their health and wellbeing.

The study employed a mixed method sequential explanatory research design to examine the health beliefs, attitudes and practices of male farmers, and to ascertain healthcare professionals’ insights of male farmers’ health beliefs, attitudes and practices. In accordance with this research design, the first phase of the study employed a quantitative research approach, and utilised structured interviews with 147 male farmers to examine their health beliefs, attitudes, and practices at three different livestock marts in Kerry. The quantitative findings were analysed utilising SPSS, and the key quantitative findings revealed farmers lacked ownership of their health, struggled with the responsibility for their health, and some farmers held inaccurate and subsequently, health damaging perceptions about their health, health issues and health practices. Although, the majority of farmers attended their GP in the last twelve months, a significant number of male farmers demonstrated poor help seeking practices, and this concerning finding was directly influenced by their perceptions of health issues. Therefore, the first quantitative phase of the study proved that some male farmers’ health beliefs and attitudes directly influenced their concomitant behaviours and practices. The first phase of the study also highlighted strategies that promoted farmers
engagement in the research which included, respect for their time, awareness of their boundaries and an understanding of the cultural characteristics of the group.

The second phase of the study employed a qualitative research approach, and utilised semi-structured interviews with 11 healthcare professionals to ascertain healthcare professionals’ experiences of engaging with male farmers through the health services. Quantitative findings that warranted further enquiry were included in the interview schedule for the second phase of the study. The key qualitative findings were analysed using thematic analysis by Braun and Clarke (2006), and revealed healthcare professionals perceived male farmers as ‘hard to reach’ because they were disinterested in their health, passive recipients in their responsibility for their health, and often presented (too) late with the onset of an illness.

In accordance with the mixed methods research design of the study, both data sets were integrated, and provided a more nuanced analysis of the study’s findings and conclusions. For instance, the conceptualisation of farmers not owning their own health was illuminated by the interviews conducted with healthcare professionals, as they revealed farmers depended on others instructions in order to take care of their own health, and had an over reliance on a female significant other to take responsibility for their health. Secondly, it showed a significant gap between farmers and healthcare professionals’ perceptions of health, health issues, and health practices. The ability to compare and contrast both data sets, revealed healthcare professionals perceptions of male farmers in Kerry were equally as inaccurate as farmers perceptions because, they referred to male farmers as ‘hard to reach’. Yet, the integrated analysis of the study’s findings challenged the stereotypical assumption that male farmers accessed services (too) late because they were disinterested in their health. Instead, the quantitative findings revealed some male farmers held inaccurate perceptions of the seriousness of a health issue, and lacked the ability to know when a health issue warranted a GP visit.
6.3 Study conclusions
The overarching contribution of this thesis was its ability to prove male farmers’ beliefs and attitudes directly influenced their concomitant behaviours and practices in Kerry. This study has provided empirical evidence to support the use of behavioural research, to challenge male farmers’ health damaging behaviours, and improve their health outcomes in Kerry. By adopting a holistic approach to an under explored topic, this thesis has provided several other important contributions to the existing literature. For instance, it raised concerns about some male farmers’ poor help seeking practices, it highlighted the significant gaps evident between farmers and healthcare professionals’ perceptions of health, health issues and health practices, and it illuminated male farmers’ struggle with ownership and responsibility for their health. It challenged existing ‘hard to reach’ discourse, and presented an alternative meaning for the term ‘hard to reach’ in relation to male farmers. It highlighted the ineffectiveness of a one-size-fits-all approach to male farmers’ health because; current service provision relied on men with a significant lack of health consciousness to attend their GP when they had an issue with their health. In this light, the study also raised the importance of increasing farmers’ levels of health consciousness through regular gender specific and culturally appropriate initiatives in the community setting. Finally, the study determined wider issues in farming influenced farmers’ health beliefs, attitudes, and practices.

This thesis concluded male farmers’ perceptions, and their beliefs and attitudes about their health and health practices in Kerry, resonated with existing hegemonic masculine discourse. A hegemonic discourse analysis of the study’s findings provided a more nuanced conclusion of the study’s contribution to the existing literature. The thesis raised concern for the significant number of male farmers that lacked the instinct and levels of health consciousness required to take ownership for their health. The study concluded some male farmers had learned to rely on others to instruct them when a health issue was serious enough to warrant a GP visit, and others had developed a dependency on a ‘female significant other’ to take care of their health. In the absence of others to take ownership of their health, male farmers’ inaccurate perceptions of the seriousness of a health issue, often meant they presented late with the onset of an illness, and were inaccurately perceived by healthcare professionals as disinterested in...
their health and as a ‘hard to reach’ group. In this respect, the fundamental conclusion of the thesis was male farmers perceptions were their reality, so if they believed they were in good health, then they were in good health, despite, the research findings suggesting otherwise.

6.4 Methodological limitations of the study
A mixed methods approach to the study achieved both breadth and depth in one single study (Halcomb and Hickman, 2015), and achieved triangulation of data, as both research approaches informed each other. This supported a more nuanced analysis and conclusion to the study's contribution, and extended knowledge in an under explored area. However, some limitations within the study merit consideration. For instance, the survey was developed to examine male farmers' health beliefs, attitudes and practices in a specific context, in this sense, it may be criticised because it precludes generalisations to farmers in the general population. However, it was developed to gauge male farmers in an area that is significantly under explored in Ireland, and therefore, the survey never intended to produce broad generalisations. Instead, the survey reflected existing literature in relation to male farmers, and served its purpose in producing knowledge about male farmers' health beliefs, attitudes and practices. It was also utilised to determine if the dominant discourse in existing literature was relevant in the context of male farmers in Kerry.

The study may be also criticised for the sampling methods utilised in the quantitative phase of study, and the small sample size employed in the qualitative phase of the study. Although the quantitative phase of the study employed TLS which is a type probabilistic sampling specifically used to engage ‘hard to reach’ groups, it was not truly random sampling because, there was no sampling frame of male farmers in Kerry to reference prior to the study. However, TLS was the least biased alternative method of non-random sampling (Semaan, 2010) and was far less biased than snowball or convenience sampling (Bryman, 2004; Woodley and Lockard, 2016). The use of purposive sampling in the qualitative phase of the study may be criticised as a limitation of the study. Yet, this type of sampling was intentionally employed to ensure the sample consisted of specific
disciplines and had the relevant experience to take part in the study. In addition, qualitative research, by its very nature precludes from quantifying and generalising individuals experiences. Proponents of qualitative methods are less concerned with the quantity of participants, and are more interested in the depth and meaning that can be elucidated from qualitative research (Silverman, 2005). The qualitative findings illuminated the broader quantitative findings and provided a more nuanced analysis of farmers' health beliefs, attitudes, and practices in Kerry.

A few months prior to the study, the IHF held a heart health check at one of the livestock marts in County Kerry. Therefore, there was the potential that this intervention may have influenced the findings yielded from one of the livestock marts. However, as already discussed throughout the thesis, 'once-off' events have limited impact on changing health behaviours (Evans, et al., 2009b; Carroll, Kirwan and Lambe, 2014), and during analysis of the quantitative data, there was no indication that one livestock mart had significantly different findings to the other two livestock marts. Lastly, there was an under representation of CMHNs in comparison to PHNs, and this may be considered a potential limitation of the study.

6.5 Recommendations based on study findings
This section presents recommendations based on the study’s findings and encourages further behavioural research in the area of male farmers' health in Ireland. Given the novelty of this research there are numerous avenues to pursue next, but the study findings specifically recommend addressing the health damaging behaviours exhibited by a significant number of male farmers in Kerry. The study’s recommendations may have implications for practice, policy, and research, to improve the health and wellbeing of farmers in rural Kerry. However, the study advocates further behavioural research is required in Ireland and therefore, the study provides recommendations that the HSE may wish to consider at a national level.
6.5.1 Key recommendations for practice

The HSE may consider the study's findings and plan a gender specific and culturally appropriate pilot programme in rural settings around Kerry, to examine further, the health beliefs, attitudes, and practices of male farmers, to challenge hegemonic discourse, and to address their health damaging behaviours. The Irish men's sheds and in particular the 'sheds for life' initiative, were found to support men's physical and mental wellbeing (Irish Men's Sheds Association (IMSA), 2017) and they improved the lives of men that attended them (Carragher, 2013). In this respect, the HSE might consider drawing on the work of 'sheds for life' to develop a pilot programme that focuses on supporting male farmers in Kerry to change their poor health behaviours. This initiative could seek to encourage male farmers' engagement with the health services in places convenient, accessible, and acceptable to male farmers. It may also serve to bridge the gap between healthcare professionals and male farmers' perceptions of health, health issues, and health practices, and could provide further insight into their perceptions of responsibility and ownership for their health. It might also promote healthcare professionals to challenge their perceptions of male farmers as a 'hard to reach' group. It may also aim to increase their health consciousness and to encourage them to take ownership of their health. The initiative might also seek to challenge the stigma associated with male farmers showing concern for their health, and equally challenge the stigma surrounding mental health issues.

The overarching aim of this pilot programme should be undertaken to better understand male farmers and to provide healthcare professionals and the health services with the knowledge required to develop services to meet their needs in the community setting. In this sense, the pilot programme could provide the information required to develop outreach health promotion initiatives in the community that are specifically targeted at male farmers, rather than the current health promotion initiatives that are either gender neutral and focused on disease management or are 'once-off' events that provide minimal knowledge of the antecedents to male farmers' health damaging behaviours. Current health promotion also provides little support to male farmers to change their health damaging beliefs, attitudes and practices. In this regard, the HSE may also consider the requirement for additional support and more regular and consistent
gender specific and culturally appropriate targeted interventions for male farmers in the community setting.

Lastly, since the study found there was a lack of gender specific and targeted interventions for male farmers in the community and a lack of gender specific training for healthcare professionals in regards to engaging men and male farmers. The HSE may consider the development of an online training programme to educate healthcare professionals on ways to maximise their engagement with male farmers. The aim of this programme should be to increase healthcare professionals' awareness and competence in regards to the delivery of gender specific, sensitive and culturally appropriate healthcare.

6.5.2 Key recommendations for research
There is a significant lack of behavioural research available in Ireland in relation to male farmers. Therefore, this study recommends that the HSE consider a large-scale study of male farmers' health beliefs, attitudes and practices in Ireland, to determine their influence on male farmers' concomitant health behaviours and practices. The study also points to further exploration of male farmers' ownership and responsibility for their health. In this respect, the study recommends further research should utilise in-depth interviews with male farmers in Kerry, to investigate male farmers delayed help seeking practices. Further research may also consider the examination of male farmers delayed help seeking practices across Ireland. The study also recommends that it may be useful for the HSE to consider undertaking research with boys from farming communities in primary and secondary school, to examine their health beliefs, attitudes and practices, and to determine their influence on concomitant behaviours and practices.

6.5.3 Key recommendations for policy
The recent Men's Health Policy has collaborated with the nationwide initiative Healthy Ireland, HI-M (2017-2021) to provide targeted interventions specifically for male farmers in Ireland (DoHC, 2016). It must be noted that the interventions outlined in this policy mostly focus on the continuation of the Farmers Have Hearts initiative. However,
it is unclear if interventions targeted at male farmers will go beyond the scope of 'once-off' events, and equally, lacks clarity in regards to specific interventions that will support behaviour change and address their unhealthy behaviours and practices, to tackle male farmers disproportionate burden of ill health in largely preventable lifestyle diseases such as cardiovascular diseases, strokes, diabetes and cancers (Evans, et al., 2009b; Van Doorn, Richardson and Osborne, 2014). In this respect, male farmers in Kerry require more than 'once-off' events to improve their health. Therefore, this thesis recommends the Healthy Ireland initiative might utilise the findings of the HSE research proposed in Section 6.5.2 to develop an outreach health promotion strategy that is gender specific and culturally appropriate and targeted at male farmers on a regular and consistent basis in the community setting. The aim of this initiative should be to support male farmers to change their health damaging behaviours and improve male farmers' health status in Ireland.

6.6 Chapter conclusion
This research study proved male farmers' health beliefs and attitudes directly influenced their concomitant behaviours and practices in Kerry. It showed a significant number of male farmers demonstrated health damaging behaviours and held inaccurate perceptions of their health, health issues, and health practices. This thesis challenged the idea that male farmers were 'hard to reach' because they were disinterested in their health. Instead, it provided a more nuanced understanding of some male farmers' poor health practices and illuminated the concept of male farmers not owning their own health. It identified that a lack of instinct and health consciousness may have contributed to some male farmers late presentation to the health services. Healthcare professionals' engagement with male farmers highlighted their dependency on others to instruct them on how to take care of their health, and their reliance on a 'female significant other' to take responsibility for their health. This thesis extended our understanding of male farmers' health beliefs, attitudes, and practices in a specific context and it contributed to existing knowledge. It provided specific recommendations to extend our knowledge of male farmers' health behaviours at both a local and national level, because the study's fundamental conclusion was male farmers perceptions were their reality, so if they believed they were in good health, then they were in good health,
despite, the research findings suggesting otherwise. Therefore, to improve male farmers' poor health status in Ireland, their levels of health consciousness must be increased, and their health behaviours and practices must be challenged to provide alternative health promoting health beliefs and attitudes that support ownership of their health because,

'What people think of as real, might as well be real, since it affects people as though it were real'

(Cropley, p. 12, 2002).
Bibliography


Appendix A: Map of County Kerry
Appendix B: Sample of reflective diaries

Second day at mart

The mart had a much better lay out and many places to approach farmers. A lot more farmers were interested in taking part and the majority of farmers answered as best as they could. Note: realised after a while when one commented that he had had a check-up at mart X a month ago that this could affect the survey, as many have just had check-ups at this mart. I felt a lot did not like to say what the reason was for going to doctor and a lot just said check-up.

A strong sense of being undervalued, overworked and underpaid - A lot do not think about their health unless something happened and they hold a simple few of it as being something to get up in the morning and even though they knew lifestyle impacted on health it was seen as something you had for so long and then it was gone, something you have when your young. Health did not seem to be linked to being proactive for many and so not linked to what they eat or if they exercised. One farmer perceived his health as good and he had multiple cancers and others had different medical conditions. Many farmers said they were responsible for their health but they said they never thought about what they ate. Alternatively, health is something you have for so long and then you do not have it anymore. Or health just linked as part of life not seen as what you do in everyday life equals your health. Money not seen as an issue for going to doctor but ignoring symptoms and playing it down big. Farmers seemed very positive to survey and to recent health screens. A lot had heard of survey on radio.

One man very open about having depression and happy that I was there he believed I could be the voice for the farmers that they do not have at the minute if the farmers would just open up and be honest with me. A very simplistic view of health that does not get much thought and seen as something one had only for so long or while your young. Farming seen as a way of life and work off farm to fund it. Accept all the challenges in farming as just the way it is and seem to have no voice to speak up for them - Financial stress seemed evident.
Appendix C: Structured interview

To gain understanding into the health beliefs, attitudes and practices of farmers in Rural Kerry

Demographics:
1. What type of farming are you involved in:
   (a) Dairying (b) Beef (c) Suckling Cows (d) Tillage (e) Sheep (f) mixed.
2. Is your farm (a) small (b) medium (c) large?
3. Is the land (a) mountainous (b) Upland hill (c) Marginal (d) Poor (e) Good?
4. Are you in your?
   20’s 30’s 40’s 50’s 60’s 70’s 80’s
   5. Do you live: (a) alone □ (c) sibling □ (e) partner □
       (b) Parent □ (d) other □
6. How much of your income comes from farm employment?
   a. ¼
   b. ½
   c. ¾
   d. all
   e. none

Beliefs:
7. Do any of these cause the farmer stress
   Strongly Agree Agree Neither Disagree Strongly Disagree
   a. Unstable income 1 2 3 4 5
   b. Pressure to expand 1 2 3 4 5
   c. Loss of control 1 2 3 4 5
   d. Lack of respect (factories, government, public) 1 2 3 4 5
   e. Working alone 1 2 3 4 5
   f. A lot of Paperwork 1 2 3 4 5
   g. Loss of farming community 1 2 3 4 5

8. Do you have someone you can rely on to run the farm if you could not? Yes □ No □
9. Do you think farmers are healthier now than in the past?  Yes ☐  No ☐

10. Have you sought medical assistance over the last 12 months?

Yes ☐  No ☐

Who did you attend?  Do you believe you should of sought assistance over the last 12 months

What was the reason?  Yes ☐  No ☐

Did you have the complaint for long before seeking assistance?  Yes ☐ No ☐

If yes, why did you not seek assistance sooner

please choose from the following

(a) cost ☐ ☐

b) fear of diagnosis ☐ ☐
c) time ☐ ☐
d) loss of earnings ☐ ☐

(e) ignored the symptoms ☐ ☐

f) didn’t think it was serious ☐ ☐

(g) Getting instructions that would interfere with farm work. ☐ ☐

(h) other ☐ ☐

11. How would you describe a person in good health?
12. How would you rate your health in general?

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
</table>

13. How much personal satisfaction do you get from your farm work?

(a) A great deal  (b) Some  (c) Very little  (d) None  (e) Don’t know

Practices

14. Do you smoke  
Yes □  No □

15.  
<table>
<thead>
<tr>
<th>always</th>
<th>Often</th>
<th>sometimes</th>
<th>rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think about my health when I drink alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I think about my health before I decide what to eat</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I am responsible for my health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I get enough exercise around the farm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I exercise off the farm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I think about my health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

16. What could make a positive difference to your health?
Appendix D: Deborah Reed permission to use survey
(Exact Email)

Hi Chrystal- here are four of the surveys we used. I don’t know how helpful they may be but, as you can see, each wave has a slightly different focus. We used a cohort panel for this four-year study and we did not want to overwhelm them with so many repeated items. We were interested in work organization, burden of work, type of work, retirement forecasting, health conditions, injuries etc. We also conducted focus groups with some of the participants to gain better insight into the quantitative results. Since this study, we conducted a two-year qualitative study to gain better insight into the farm families perceptions of what they consider the most pressing challenges they have as they age in faring, and what formats they may want to have educational materials or information provided. We have a publication in press with the Jrn of Agricultural Safety and Health on those findings. We are now in the midst of developing and testing Farm Theater that covers health and safety in farming. The project is being very well received but we do not have initial results of actual behaviour change as of yet. I hope this is somewhat helpful and we can continue our conversations.

Deborah B. Reed, PhD, MSPH, RN, FAAOHN, FAAN
Distinguished Service Professor and Good Samaritan Endowed Chair
Phone: 859-257-9636
Facebook www.facebook.com/Agriculture.nurse

I have begun a part time position in the College of Nursing. I will check emails most days, but not all. Generally, I will respond within three business days. If you need to reach me urgently, please call the College of Nursing at 859 323 3304

Mailing address: University of KY
553 College of Nursing Building
Lexington, KY 40536


From: Claunch, Deborah T
Sent: Friday, December 11, 2015 8:37 AM
To: Reed, Deborah B
Subject: Older Farmer Surveys
Appendix E: Sample of questions across three of Deborah Reed’s surveys

- that informed pilot studies and the full study’s survey

*Full lengthy surveys can be made available on request

Survey 1

**WAVE 2 - MALE FARMER SURVEY**

6. Which of the following best describes your feelings now about the changes you have made in your farm operation? *(circle the letter next to the best response and circle only one)*

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Pleased</td>
<td>(I’m happy that I made the change)</td>
</tr>
<tr>
<td>b. Angry</td>
<td>(I’m upset and feel that it’s unfair that I can’t farm anymore)</td>
</tr>
<tr>
<td>c. Ambivalent</td>
<td>(It didn’t much bother me one way or the other to make the change)</td>
</tr>
<tr>
<td>d. Sad</td>
<td>(I feel badly that I can’t farm, but I don’t blame anybody or feel angry towards anyone)</td>
</tr>
<tr>
<td>e. Numb</td>
<td>(I can’t get myself to accept that this has happened. I haven’t gotten over it yet.)</td>
</tr>
<tr>
<td>f. Relieved</td>
<td>(I’m just thankful that I don’t have the worries of the farm anymore)</td>
</tr>
</tbody>
</table>

*influenced pilot 1

7. How important is off-farm income (by you or members of your household) to each of the following: *(Circle one answer for each line).*

<table>
<thead>
<tr>
<th>Importance to...</th>
<th>Very Important</th>
<th>Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Your ability to continue farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Your family’s ability to get health insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Your ability to take time off from the farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Your family’s overall quality of life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Your planning for retirement</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*influenced pilot and full survey
12. Overall, how much personal satisfaction do you get from your farm work? This includes running errands and bookkeeping. *(Circle one answer)*

a. A great deal of satisfaction  
b. Some satisfaction  
c. Very little satisfaction  

*Influenced survey*

SECTION II. Attitudes about Farm Work and Life

15. Please answer each question below on the scale of 1-5 with 1 being not important and 5 being very important. *(Circle one number for each question)*

<table>
<thead>
<tr>
<th>Aside from income, how important is it to you to...</th>
<th>Not Important</th>
<th></th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Maintain the family tradition of farming</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b. Bring a family member into the operation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c. Keep this farm in the family</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d. Maintain this farm as an active operation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e. Have more time to spend with your family</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f. Have an opportunity to work outdoors</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g. Have an opportunity to work with animals/crops</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h. Have the management challenge of operating the farm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i. Make sure the farm will be taken over by a family member</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>j. Keep this land from being developed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>k. To do farm work</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Influenced pilot and full survey*
19. How would you rate your health in general? (*Circle one answer*)

Excellent  Very Good  Good  Fair  Poor

*influenced pilot and full survey

22. Who did your farm work while you were injured? (*Check all that apply*)

___ a. Spouse   ___ e. Hired labor

___ b. Other family member   ___ f. No one helped me with farm work

___ c. Farm partner (not family member)   ___ g. Other help (specify)

___ d. Neighbors

*influenced pilot and full survey*
Appendix F: Interview schedule

Phase Two: Interview Schedule

1. How long are you a practising healthcare professional?
2. How would you categorise the health of men?
3. How would you categorise the health of male farmers?
4. In your professional experience, do you think male farmers' health has worsened or improved over time?
5. In your experience, how would you categorise male farmers' engagement with the health services?
6. How do you think the healthcare services are meeting their needs?
7. What factors do you think influence farmers' health?
8. Do you think male farmers' health needs improving?
9. How do you think healthcare professionals could entice men to improve their health?
Appendix G: Record of attempts to recruit mental health nurses

Mental health sample

I explained the importance of mental health professionals contributing to the research and have an equal representation of both general and mental health nurses. I was instructed to email the head person. I emailed a cover letter and an information leaflet.

The mental health services in the areas of the research sites were telephoned for several weeks with no replies to messages left. As time went on the phone calls were increased to daily or every second day to chase up on the phone calls that never came and again the researcher was told someone would make contact. Finally, after weeks of this, the researcher contacted and asked who they could speak to as data collection was soon to be completed. The study and the importance of mental health nurses participation was highlighted. The researcher stressed that they wanted to have an equal representation from both disciplines of nursing in the study. As a result, all this information and the study information was sent on to this mental health service. They assured the researcher that the nursing management would be forwarded this email and respond in due course. However, this never transpired. After several weeks of this, the data collection was complete and mental health nurses are underrepresented in the study.
Appendix H: Participant information leaflet – farmers

Title of Research Study
A case study approach to understanding the health beliefs, attitudes, and practices of male farmers in rural Kerry.

Dear Participant,

You are invited to take part in a research study to examine the health beliefs, attitudes, and practices of male farmers in rural Kerry. I would like you to take part in a questionnaire, which will ask you about your health beliefs, attitudes, and practices. This research is part of a Masters by Research at the Institute of Technology Tralee.

Before you take part in the study it is important that you understand what the research is for and what you will be asked. Please take your time to read the following information and discuss it with others if you wish. It is up to you to decide to take part or not and you can change your mind at any time without giving any reason.

The purpose of this research study is to explore the health beliefs, attitudes, and practices of male farmers in rural Kerry. You have been chosen, as you are a male farmer in rural Kerry. This study will have two parts. The first part is a questionnaire with over 100 farmers and the second part will be semi-structured interviews with healthcare professionals.

The information from this questionnaire may have implications in recommendations for best practice and offer insights into the health beliefs, attitudes and experiences of male farmers in rural Kerry. If anything throughout the questionnaire upsets you, please feel free to stop the questionnaire at any time. If you would like some additional help after the interview I will be able to advise you who to contact, for example G.P, Community Nurse, Counsellor etc

Your response will be treated with full confidentiality and those who take part in the research will not be required to provide names or reveal their identity. At the end of the research I will write a thesis on my results and these may be published in peer reviewed journals and conference presentations.

Thank you

Chrystal O Brien

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Appendix I: Consent form for farmers

Intention of Consent

I have been asked to participate in a structured interview (research survey) on male farmers' health beliefs, attitudes and practices in rural Kerry.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I agree to take part in the above study.</td>
<td></td>
<td></td>
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</tbody>
</table>

Signature of Participant __________________________

Date __________________________

Day/month/year
Appendix J: Participant information leaflets – healthcare professionals

Title of Research Study

A case study approach to understanding the health beliefs, attitudes and practices of male farmers in rural Kerry.

Dear Participant,

You are invited to take part in a research study that seeks to understand the health beliefs, attitudes and practices of male farmers in Rural Kerry. This research is part of a Masters by Research at the Institute of Technology Tralee. Before you take part in the study it is important that you understand what the research is for and what you will be asked. Please take your time to read the following information and discuss it with others if you wish. It is up to you to decide to take part or not and you can change your mind at any time without giving a reason.

The research study consisted of two phases. The first phase was structured interviews with male farmers in Kerry and was conducted in three different livestock marts in February 2016 and yielded 164 respondents (farmers). The second phase of the study is due to commence in June 2016 and consists of semi-structured interviews with healthcare professionals within Kerry. As a result, I would like you to take part in a semi-structured interview, which will comprise of two parts. The first part of the interview will seek to ascertain your views on male farmers’ health in Kerry. The second part of the interview will present findings from phase one of the study and will seek your thoughts on these initial findings.

Findings from Phase One of the Study: Male Farmers were found to be:

1. Very distant from health in their everyday lives. (No link between what they do and their health or the impact on their health).
2. Feel they do no own their health; regardless of what they do; it is only theirs for a certain period of time.
4. Doctor given responsibility for ill health
5. Men were interested about health when engaged – they began to think about it.

The information from this study may have implications in recommendations for best practice and offer insights into the health beliefs, attitudes and practices of male farmers in Rural Kerry. If anything throughout the interview causes you discomfort please free to stop at any time. If you would like some additional supports after the interview I will advise you who to contact. Finally, your response will be treated with the utmost confidentiality and those who take part in the study are not required to reveal their identity. The research data will be safely secured for five years within the Institute of Technology and then will be destroyed. At the end of the research I will write a thesis on my results and these may be published in peer reviewed journals and conference presentations.

Thank you
Chrystal O'Brien
Masters by Research Student
Institute of Technology Tralee
Appendix K: Consent form for health professionals

I have been asked to participate in a semi-structured interview based on professional experience to add insight into understanding the attitudes, beliefs and practices of male farmers in rural Kerry.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.</td>
<td></td>
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<tr>
<td>I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.</td>
<td></td>
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<tr>
<td>I agree to take part in the above study.</td>
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</tbody>
</table>

Signature of Participant _______________________

Date _______________________

173
Appendix L: Pilot version of structured interview

1. Which age group are you in?    (a) 30–39 (b) 40–49 (c) 50–59 (d) 60–69 (e) 70–79

2. Are you in a relationship?      ___ Yes      ___ No

3. When was the last time you saw a health care provider (doctor, nurse, chiropodist etc)?      _____ / _____ (Month/Year)

4. If Yes was it a routine visit or was it for an acute/chronic medical condition?
   a. Routine visit   b. Acute medical problem   c. Chronic medical condition

5. What is your attitude about going to the doctor
   Agree  Neither  Disagree
   A Waiting too long to be seen
   B Opening times should be extended
   C I feel very comfortable in the doctors
   D I’d only go the doctor if I was on my last leg
   E My doctor has a good understanding of agricultural health
   F I visit my doctors when I don’t feel right
   G I would only go to the doctor if I was unable to do my farm work
   H I have a good relationship with my doctor
   I I would prefer to talk to a nurse than a doctor
   J I would prefer to talk to a woman than a man about my problems

6. How would you best define ‘good health’? Would you say it is:
   a. The absence of pain    c. The ability to work
   b. The absence of major disease  d. Not having to take tablets
   e. Some other definition

7. How would you rate your health in general?

174
Excellent | Very Good | Good | Fair | Poor
---|---|---|---|---

8. In The Last Month, How Often Have You:  

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Almost Never</th>
<th>Some Time</th>
<th>Fairly Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felt stressed and nervous?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt that things were going your way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Been able to control irritations in your life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Been able to control the way you spend your time?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Felt difficulties were piling up so high that you could not overcome them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt lonely</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

9. Would you say these are causing stress on the farm:  

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Fluctuations in prices too frequently.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Pressure to expand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Farm being controlled by outside forces instead of the farmer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Lack of respect for the farmer by buyers eg changing order last minute or dropping prices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Being self-employed and getting injured/sick.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Farmer working alone on the farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Family working off farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. A lot of Paperwork/admin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Loss of farming community</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How much personal satisfaction do you get from your farm work?  

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>A great deal of satisfaction</td>
</tr>
<tr>
<td>b.</td>
<td>Some satisfaction</td>
</tr>
<tr>
<td>c.</td>
<td>Very little satisfaction</td>
</tr>
<tr>
<td>d.</td>
<td>No satisfaction</td>
</tr>
<tr>
<td>e.</td>
<td>Don’t know</td>
</tr>
</tbody>
</table>

11. Do you have someone you rely on for assistance with your farm work if you need it for any of the following situations?
12. Do you think farming has changed?
13. If so which of the following best describes your feelings now about the changes in farming?
   A. pleased   B. Angry   C. not bothered   D. Sad   E. Relieved   F. stressed

14. A Good farmer would:

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Neither</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Work hard and long hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Borrow and expand the farm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Take breaks/holidays at least once a year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Be physically fit and strong for farm work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Have a balance between farm, family and leisure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. All paperwork done after the days' work each day.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Put the animals first</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Look after their own health</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. If there were one thing that could make a difference to your health what would it be?

16. Would you say your farm is (a) small (b) medium (c) large?

17. Would you describe the land as (a) Upland hill (b) Marginal (c) Poor (d) Good?

18. What type of farming are you involved in (a) Dairying (b) Beef (c) Suckling Cows (d) Tillage, (e) Sheep (f) mixed?

19. How much of your income comes from off farm employment?
   b. ¼   b. ½   c. ¾   d. all   e. none

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Appendix M: Sample of semi-structured interview

Interview 7

Q. 1 Professional background – (removed to protect anonymity)

Q. 2 (a) How would you categorise the health of men in general?

Men are not sharers they do not share their thoughts and if they do so it is only reluctantly and the concept of men with a stiff upper lip still very much applies.

The perception is that women have lots of mental health problems or at least not so much mental health problems.....But lots of emotional issues. The reality is that women will talk about their emotional issues were as men do not. Now in fairness it is changing and I am seeing more men coming forward but it would still be the case that I would not see as many men as I see women. That the men there is the still the attitude among some of them is that you got to suck it up.

Q. 2 (b) How would you categorise the health of male farmers?

Among the male farmers there is actually quite a spectrum there, there are and indeed in fairness the vast majority of male farmers are actually well adjusted and actually cope quite well. But there are within that, farmers who are struggling, the ones that are struggling for specific structural reasons. What I mean to say by that is because of things like for example with milk prices down to 22 or 23 cents a litre that puts a lot of guys to the pin of their collar especially if they have got substantial debts and so you have got people struggling but to a certain extent those farmers are no different to for example people who overextended before the boom and bought land and they saw the price of land disappearing and not able to sell houses....and things like that. and separately from that then there are a smaller group of farmers particularly and the group that I think are at specific risk are the older bachelor farmers, men who do not have family support, where their own siblings have moved away and where they are left running the farms.

Part of the difficulty is that they do not know when to call it to a halt. What I mean by that is that you have lads that are tipping away at farms long pass the point and time where they are physically capable of doing it. Added to that there are significant issues of social isolation, access to other people, getting out socially and that kind of stuff and so one of the concerns is, it is tip of the iceberg stuff the reality is that certainly in Kerry and I have no doubt throughout the country what you are seeing is an increase in the number of older single men dying through suicide and a lot of them I think are of farming background. They do not always make it easy for people to talk to them. They are by their nature comfortable, they will exist, what I mean by that is they function within a certain sort of defined parameter that their comfortable with. But often times that leaves them very poorly kitted out in terms of even just ordinary things like washing, feeding dressing themselves but also in terms of access to social company and so on. To a certain extent, to a certain extent, the pub maybe an outlet but the difficulty is that the pub also carries with it its own particular hazards that the difficulty is increasingly when you got lads who used to go down to the pub for the couple of pints obviously they cannot do that now unless they have somebody to drive them home and often times they do not know who to talk to. I do think that there are places that farmers can meet be it the marts the co-op whatever. Alright it used to be the creamery ........ now with bulk tankers coming to door the lads might not even see the driver of the bulk tanker do you know what I mean. So what we need to do is find try and create structures and means and ways where naturally the men can get together and congregate. Perhaps to use structures like through Teagasc or whatever whereby you can encourage farmers to get involved in terms of improving their own productivity if you like but on the back of that then to sort of slip in to that ways, talks whatever whereby you can help them develop or enhance their own resilience their own ability to cope and I think then you also need to find means by which you can reach put to these men and it is about the contact it is about encouraging them to actually come and just talk and that is what it is about at the end of the day actually having somebody to talk to. You are not going to stop suicide from happening but you will probably reduce the rates of suicides. And I do think
that the suicide prevention programmes have been successful in the extent that we are seeing less in the way of young men committing suicide but now we are seeing older men committing suicide or maybe it is just that we are seeing less younger men committing suicide but the old men are continuing to commit suicide all the time and we need to find means to reaching out to them......................reach out to these lads and talk to them at their level.

Q. 3. In your experience, how would you categorise farmers' engagement with the health services and suppose turning that around how do you think the healthcare services are meeting their needs?

The lads (male farmers) will tend to contact us when things are well advanced and I am talking about that cohort now do not get me wrong we are talking again about the whole spectrum but I am looking at the particularly at risk group these lads do tend to turn up at the very end of the various processes. I saw a man during the week who has had a cancer in his neck for the last year and has ignored it. I asked him was it bleeding and he said no when the evidence was that it actually was bleeding. I think we got to find need means by which we can engage with these men. The previous outlets they had like I said go back 30 years ago all the guys would have meet at the creamery there was no alternative they had to meet at the creamery. They would go down and be there for two or three hours while the milk was being off loaded .............and they had time to talk to each other. That is gone. We need to find structures in the towns.

The men's sheds movement is very successful and that's great for guys who worked in factories all their lives and they can meet up with each other likeminded individuals and they can do things together. That does not work for the farmers because the lads have this tie to the land and they do not want to leave the farms. They do not want to interfere with the rhythm of life and they got to look after their animals and so on. Trying to find time in their lives to get the lads together and meet and maybe things like facilitating rural transport would help because that would at least give them the opportunity to get out and they would not have to be driving and they can actually be brought to and from their farms.

Q4 What Factors do you think are influencing farmers health?

The younger farmers are as aware as health issues as anybody else and in fairness to them the younger farmers are trying to strike their work life balance. They are trying to make sure that they look after their own health and they are coming in for their check-ups and so on. For the older farmers the difficulty is that they often times are working far too hard. A phenomenon just by example something that I would be aware of is that there is a condition were men literally tear away their shoulders all the muscles in their shoulder get torn from putting on clusters milking clusters and things like that and the thing about it is often times we only see those lads when they are in dire dire pain.

Q 5 Do you think male farmers health needs improving?

The difficulty is that we are not .... That is the truth of it, we are not. There is a group of men who were currently their needs are not being met. There are lonely people in towns but there are certainly more opportunities in towns.........................I do think there is actually is a cohort of men out there who are actually being very poorly served. I mean we see them ...when they have illness and sickness but it tends to be only when they are broken down that we actually see them.

Q. 4 In your professional experience, how would you categorise the health of male farmers in Kerry; and do you think it has better or worse overtime?

I have got lads who are in their fifties, sixties and seventies and beyond who have not organised succession. I am seeing men in their mid-sixties whose health is beginning to break down and these were successful farmers and their health is beginning to break down because of the workload and they do not really have any exit strategy they do not know what to do. Partly the difficulty is that for many of the lads they have no idea what to do with themselves if they are not farming and that is something else we need to sort of tap into. How do you find means of which we can keep these lads engaged? The farmers' wives will get involved in the senior citizens groups and they will go away for day trips and things like that. The lads do not the lads feel their obliged I mean farming is very much a lifestyle and the lads will stay in the farms long past the point of which they should actually have given up work.
I mean just by way of anecdote I had two lads who two old men they have since past away and the two boys had increasingly severe arthritis and the problem was that periodically one or other or both of the men would end up in hospital because of their illnesses they had a sister in X and she came down to sell the cattle because the cattle were going to die because there was no one to look after them. The boys would get half way better and they would come out and they would stock up again and I had these lads both of the men were using two crutches to get around and they were trying to farm with two crutches you know crazy stuff.

Q. 6. How do you think healthcare professionals could entice men to improve their health?

I suppose part of the thing is no more so than any other sector of the community is we need to make them feel welcome alright. We need to make sure that as healthcare professionals that we provide them with an ear. Now part of the challenge for the healthcare services is time, is actually giving these people time and giving them enough time to properly discuss their issues. It is not just a question of the guy who comes in with the head cold or whatever.....yes he wants to talk about that but in my own experience they often times have other things they want to say to you and it is only overtime that in discussing things with them, it is not one single bite of the cherry you will eventually get to the point where the lads will say they are lonely.

To a certain extent they would be looking to us for solutions and sometimes solutions are easy but sometimes there not. A lot of the time....... Health is determined by lifestyle. Therefore, the difficulty is how do you encourage these lads to adhere to a healthy lifestyle? The difficulty is particularly the older bachelor farmers is often times their diet is appallingly poor, it is convenience food, it is whatever is the easiest for them to cook up. Hygiene is not great they are not looking after themselves, not washing themselves, not washing their clothes, not washing their dishes and often times they are working crazy crazy hours and doing things that are physically hugely troublesome and they have very little in the way of social outlets they might watch television for a couple of hours in the evening they might on occasion go for a pint down in the nearest village or town but that is about the size of it and so their lives can be quite monotonous they do not have outlets that is the difficulty and trying to create the outlets is the issue.
Appendix N: A sample of initial codes of the two open-ended questions in the survey

(Extracted from excel)

Q11

Describe_GoodHealth
mental health and strong and fit
mental health and less stress
get up in the morning and ability to work
keep fit
Fit
hard work: the harder I work the healthier I do be and not to drink or smoke
no diseases
no tablets
Fit
do farm work without any difficulty
to be able to get up and no pain
get up and walk around and do farming
get up every in the morning
get up and go
to be able to stand up and be active
mental health and not be sick
good appetite and good eyesight
Happy
keep fit and look after yourself
eating healthy and keeping fit and working proper hours
fit and to get up in the morning
able to work
go out and walk a few miles
get up in the morning and able to walk about
happy in your job and able to work and less stress and mental health
fit and healthy
nothing wrong with you and no diseases
get up in the morning
get up every day and work
good humour and happy and look healthy
check self out regularly and staying out of hospital
avoid doctors and hospitals
healthy looking
up and about everyday
get up in the morning and once you can eat
physically healthy and no medical complaints and personal wellbeing
young and lively on the legs
keep taking meds and stop smoking
work everyday
bp under control and full check yearly
get up in the morning and diet
Appendix O: Point of initial integration of the two phases of the study

<table>
<thead>
<tr>
<th>Phase 1: Key Findings from the research surveys</th>
<th>Phase 2: Development of the interview schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Men claim full responsibility for their health</td>
<td>Q. 1 (a) and (b) warm up - So how long are you</td>
</tr>
<tr>
<td>But struggle with this - What I should V what I</td>
<td>a practising healthcare professional?</td>
</tr>
<tr>
<td>actually do</td>
<td>How would you categorise the health of men.</td>
</tr>
<tr>
<td>2. Men claim doctor/healthcare professional</td>
<td>Q. 2 (a) and (b) Farmers heath status</td>
</tr>
<tr>
<td>responsible for their ill health</td>
<td>In your professional experience, how would</td>
</tr>
<tr>
<td></td>
<td>you categorise the health of male farmers in</td>
</tr>
<tr>
<td></td>
<td>Kerry; and do you think it has better or worse</td>
</tr>
<tr>
<td></td>
<td>overtime?</td>
</tr>
<tr>
<td>3. They do not think about their health until</td>
<td>Q. 3 (a) and (b) Level of Engagement</td>
</tr>
<tr>
<td>there daily activities of living are affected</td>
<td>In your experience, how would you</td>
</tr>
<tr>
<td></td>
<td>categorise farmers' engagement with the</td>
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<td></td>
<td>health services and suppose turning that</td>
</tr>
<tr>
<td></td>
<td>around how do you think the healthcare</td>
</tr>
<tr>
<td></td>
<td>services are meeting their needs?</td>
</tr>
<tr>
<td>4. Men do not link daily activities with health-</td>
<td>Q. 4 What factors do you think influence</td>
</tr>
<tr>
<td>What they eat, how they work, exercise ....</td>
<td>farmers' health?</td>
</tr>
<tr>
<td>5. Farming is having a negative impact on their</td>
<td>Q. 5 Do you think male farmers health needs</td>
</tr>
<tr>
<td>health</td>
<td>improving?</td>
</tr>
<tr>
<td>6. lot of stress – financial stress</td>
<td>Q. 6 Last Question Getting men involved in</td>
</tr>
<tr>
<td>7. many do not value their health- work first</td>
<td>their health</td>
</tr>
<tr>
<td></td>
<td>How do you think healthcare professionals</td>
</tr>
<tr>
<td></td>
<td>could entice men to improve their health?</td>
</tr>
<tr>
<td>8. Men see health as not their own.</td>
<td></td>
</tr>
<tr>
<td>They do not own it and will only have it for a</td>
<td></td>
</tr>
<tr>
<td>certain period, so it is out of their control.</td>
<td></td>
</tr>
<tr>
<td>9. Men were interested about health when engaged –</td>
<td></td>
</tr>
<tr>
<td>they began to think about it so challenges idea of</td>
<td></td>
</tr>
<tr>
<td>no interest or 'hard to reach'.</td>
<td></td>
</tr>
<tr>
<td>10. Evident: lack of preventative health</td>
<td></td>
</tr>
<tr>
<td>11. Lack of basic knowledge about health/how to</td>
<td></td>
</tr>
<tr>
<td>be healthy</td>
<td></td>
</tr>
<tr>
<td>12. Very evident the need for a consistent</td>
<td></td>
</tr>
<tr>
<td>support system to enable/facilitate a lot of men</td>
<td></td>
</tr>
<tr>
<td>interested in improving health</td>
<td></td>
</tr>
</tbody>
</table>

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Appendix P: To explore the distribution of cause of stress across three categories of age

**Continuous Field Information**

- N = 147
- Min = 2.71
- Max = 4.86
- Mean = 4.35
- Std. Dev. = 0.417

**Stress Score Report**

<table>
<thead>
<tr>
<th>Age3</th>
<th>Cause</th>
<th>Stress Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 and below</td>
<td></td>
<td>4.2857</td>
</tr>
<tr>
<td>Between 40 and 60</td>
<td></td>
<td>4.4286</td>
</tr>
<tr>
<td>60 and above</td>
<td></td>
<td>4.5714</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4.4286</td>
</tr>
</tbody>
</table>

**Hypothesis Test Summary**

- Null Hypothesis: The distribution of Stress Score is the same across categories of Age3.
- Test: Kruskal-Wallis Test
- Sig.: 0.012
- Decision: Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is 0.05.
Appendix Q: To explore the distribution of cause of stress across three categories of farm size

**Continuous Field Information**

<table>
<thead>
<tr>
<th>StressScore</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Der.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.14</td>
<td>146</td>
<td>3.00</td>
<td>4.86</td>
<td>4.36</td>
<td>0.396</td>
</tr>
</tbody>
</table>

**Report**

<table>
<thead>
<tr>
<th>Size of Farm</th>
<th>Cause StressScore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>4.4286</td>
</tr>
<tr>
<td>Medium</td>
<td>4.5714</td>
</tr>
<tr>
<td>Large</td>
<td>4.2143</td>
</tr>
<tr>
<td>Total</td>
<td>4.4286</td>
</tr>
</tbody>
</table>
Hypothesis Test Summary

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of StressScore is the same across categories of Size of Farm.</td>
<td>Independent-Samples Kruskal-Wallis Test</td>
<td>.047</td>
<td>Reject the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

### Independent-Samples Kruskal-Wallis Test

<table>
<thead>
<tr>
<th>Size of Farm</th>
<th>StressScore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Large</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total N</th>
<th>146</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Statistic</td>
<td>6.121</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>2</td>
</tr>
<tr>
<td>Asymptotic Sig. (2-sided test)</td>
<td>.047</td>
</tr>
</tbody>
</table>

1. The test statistic is adjusted for ties.
Each node shows the sample average rank of Size of Farm.

<table>
<thead>
<tr>
<th>Sample1-Sample2</th>
<th>Test Statistic</th>
<th>Std. Error</th>
<th>Std. Test Statistic</th>
<th>Sig.</th>
<th>Adj.Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-Small</td>
<td>15.176</td>
<td>10.732</td>
<td>1.414</td>
<td>.157</td>
<td>.472</td>
</tr>
<tr>
<td>Large-Medium</td>
<td>23.139</td>
<td>9.425</td>
<td>2.455</td>
<td>.014</td>
<td>.042</td>
</tr>
<tr>
<td>Small-Medium</td>
<td>-7.963</td>
<td>8.290</td>
<td>-0.961</td>
<td>.337</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05. Significance values have been adjusted by the Bonferroni correction for multiple tests.
Appendix R: To explore the distribution of cause of stress across participants' living arrangements

<table>
<thead>
<tr>
<th>Living2</th>
<th>StressScore</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Partner</td>
<td>4.2857</td>
</tr>
<tr>
<td>Partner</td>
<td>4.4286</td>
</tr>
<tr>
<td>Total</td>
<td>4.4286</td>
</tr>
</tbody>
</table>
## Hypothesis Test Summary

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of StressScore is the same across categories of Living2.</td>
<td>Independent-Samples Mann-Whitney U Test</td>
<td>.042</td>
<td>Reject the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

### Independent-Samples Mann-Whitney U Test

<table>
<thead>
<tr>
<th>Living2</th>
<th>No Partner</th>
<th>Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>10.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Asymptotic Sig. (2-sided test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>2.959</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>7.300</td>
</tr>
<tr>
<td>Standard Error</td>
<td>243.666</td>
</tr>
<tr>
<td>Standardized Test Statistic</td>
<td>2.031</td>
</tr>
</tbody>
</table>

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Appendix S: To explore individual cause of stress items across three age groups—burden of paperwork

Item = burden of paperwork

### Hypothesis Test Summary

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of Paperwork is the same across categories of Age3</td>
<td>Independent-Samples Kruskal-Wallis Test</td>
<td>.016</td>
<td>Reject the null hypothesis.</td>
</tr>
<tr>
<td>The distribution of Loss of community is the same across categories of Age3</td>
<td>Independent-Samples Kruskal-Wallis Test</td>
<td>.001</td>
<td>Reject the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

### Ranks

<table>
<thead>
<tr>
<th>Age3</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paperwork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 and below</td>
<td>54</td>
<td>63.67</td>
</tr>
<tr>
<td>Between 40 and 60</td>
<td>40</td>
<td>81.98</td>
</tr>
<tr>
<td>60 and above</td>
<td>52</td>
<td>77.19</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Loss of community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 and below</td>
<td>54</td>
<td>60.59</td>
</tr>
<tr>
<td>Between 40 and 60</td>
<td>40</td>
<td>75.58</td>
</tr>
<tr>
<td>60 and above</td>
<td>52</td>
<td>85.31</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td></td>
</tr>
</tbody>
</table>

### Continuous Field Information

- N = 146
- Min = 2
- Max = 5
- Mean = 4.51
- Std. Dev = 0.927

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Independent-Samples Kruskal-Wallis Test

<table>
<thead>
<tr>
<th>Group</th>
<th>Total N</th>
<th>Test Statistic</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Sig. (2-sided test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 and below</td>
<td>61.98%</td>
<td>8.299</td>
<td>2</td>
<td>0.016</td>
</tr>
<tr>
<td>Between 40 and 60</td>
<td>31.58%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 and above</td>
<td>6.45%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The test statistic is adjusted for ties.

Pairwise Comparisons of Age3

Each node shows the sample average rank of Age3.

<table>
<thead>
<tr>
<th>Sample1-Sample2</th>
<th>Test Statistic</th>
<th>Std. Error</th>
<th>Std. Test Statistic</th>
<th>Sig.</th>
<th>Adj. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 and below-60 and above</td>
<td>-13.526</td>
<td>6.328</td>
<td>-2.137</td>
<td>.033</td>
<td>.098</td>
</tr>
<tr>
<td>40 and below-Between 40 and 60</td>
<td>-18.308</td>
<td>6.794</td>
<td>-2.695</td>
<td>.007</td>
<td>.021</td>
</tr>
<tr>
<td>60 and above-Between 40 and 60</td>
<td>4.783</td>
<td>6.850</td>
<td>.698</td>
<td>.485</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05. Significance values have been adjusted by the Bonferroni correction for multiple tests.
Appendix T: To explore individual cause of stress items across three age groups - loss of community

Item = *Loss of community*

![Continuous Field Information](image)

![Independent-Samples Kruskal-Wallis Test](image)

| Total N | 146 |
| Test Statistic | 13.124 |
| Degrees of Freedom | 2 |
| Asymptotic Sig. (2-sided test) | .001 |

1. The test statistic is adjusted for ties.
### Pairwise Comparisons of Age3

Each node shows the sample average rank of Age3.

<table>
<thead>
<tr>
<th>Sample1</th>
<th>Sample2</th>
<th>Test Statistic</th>
<th>Std. Error</th>
<th>Std. Test Statistic</th>
<th>Sig.</th>
<th>Adj.Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 and below</td>
<td>Between 40 and 60</td>
<td>-14.982</td>
<td>7.379</td>
<td>-2.031</td>
<td>.042</td>
<td>.127</td>
</tr>
<tr>
<td>40 and below</td>
<td>60 and above</td>
<td>-24.715</td>
<td>6.872</td>
<td>-3.596</td>
<td>.000</td>
<td>.001</td>
</tr>
<tr>
<td>Between 40 and 60</td>
<td>60 and above</td>
<td>-9.733</td>
<td>7.439</td>
<td>-1.308</td>
<td>.191</td>
<td>.572</td>
</tr>
</tbody>
</table>

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05. Significance values have been adjusted by the Bonferroni correction for multiple tests.
Appendix U: To explore the distribution of cause of scores to the item exercise off-farm across income groups (percentage of income earned from farming)

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of I get enough exercise OFF farm is the same Samples across categories of % of Income from farming.</td>
<td>Kruskal-Wallis Test</td>
<td>.012</td>
<td>Reject the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

Ranks

<table>
<thead>
<tr>
<th>Income</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health_ExerciseOFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25% and below</td>
<td>40</td>
<td>88.39</td>
</tr>
<tr>
<td>Between 25% &amp; 75%</td>
<td>31</td>
<td>66.27</td>
</tr>
<tr>
<td>75% and above</td>
<td>74</td>
<td>67.50</td>
</tr>
<tr>
<td>Total</td>
<td>145</td>
<td></td>
</tr>
</tbody>
</table>

independent-Samples Kruskal-Wallis Test

<table>
<thead>
<tr>
<th>% of Income from farming</th>
<th>Total N</th>
<th>Test Statistic</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Sig. (2-sided test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% and below</td>
<td>145</td>
<td>8.830</td>
<td>2</td>
<td>.012</td>
</tr>
<tr>
<td>Between 25% &amp; 75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75% and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The test statistic is adjusted for ties.
Pairwise Comparisons of % of Income from farming

Each node shows the sample average rank of % of Income from farming.

<table>
<thead>
<tr>
<th>Sample1-Sample2</th>
<th>Test Statistic</th>
<th>Std. Error</th>
<th>Std. Test Statistic</th>
<th>Sig.</th>
<th>Adj.Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 25% &amp; 75%-75% and above</td>
<td>-1.226</td>
<td>8.244</td>
<td>-.149</td>
<td>.882</td>
<td>1.000</td>
</tr>
<tr>
<td>Between 25% &amp; 75%-25% and below</td>
<td>22.113</td>
<td>9.221</td>
<td>2.398</td>
<td>.016</td>
<td>.049</td>
</tr>
<tr>
<td>75% and above-25% and below</td>
<td>20.888</td>
<td>7.563</td>
<td>2.762</td>
<td>.006</td>
<td>.017</td>
</tr>
</tbody>
</table>

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.
Appendix V: To explore the distribution of cause of scores for the item responsibility for own-health across age groups

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of I am responsible for my health is the same across categories of Age.</td>
<td>Independent-Samples Kruskal-Wallis Test</td>
<td>.014</td>
<td>Reject the null hypothesis.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Age3</th>
<th>N</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health_Responsible</td>
<td>40 and below</td>
<td>55</td>
<td>75.82</td>
</tr>
<tr>
<td></td>
<td>Between 40 and 60</td>
<td>39</td>
<td>59.09</td>
</tr>
<tr>
<td></td>
<td>60 and above</td>
<td>52</td>
<td>81.86</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>146</td>
<td></td>
</tr>
</tbody>
</table>

Independent-Samples Kruskal-Wallis Test

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N</td>
<td>146</td>
</tr>
<tr>
<td>Test Statistic</td>
<td>8.543</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>2</td>
</tr>
<tr>
<td>Asymptotic Sig. (2-sided test)</td>
<td>.014</td>
</tr>
</tbody>
</table>

The test statistic is adjusted for ties.
Each node shows the sample average rank of Age3.

<table>
<thead>
<tr>
<th>Sample1-Sample2</th>
<th>Test Statistic</th>
<th>Std. Error</th>
<th>Std. Test Statistic</th>
<th>Sig.</th>
<th>Adj.Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 40 and 60-40 and below</td>
<td>16.728</td>
<td>7.854</td>
<td>2.130</td>
<td>.033</td>
<td>.100</td>
</tr>
<tr>
<td>Between 40 and 60-60 and above</td>
<td>-22.766</td>
<td>7.947</td>
<td>-2.865</td>
<td>.004</td>
<td>.013</td>
</tr>
<tr>
<td>40 and below-60 and above</td>
<td>-6.038</td>
<td>7.257</td>
<td>-.832</td>
<td>.405</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.