Exploring the barriers and facilitators of healthy lifestyles and educational responsibilities of Registered Nurses.

Submitted for Masters of Health Science (Research)

P V Heidke
11-9-2017
Abstract

Certain health risk behaviours are modifiable by the individual, such as diet, smoking, physical activity and alcohol consumption. This study aimed to investigate the prevalence of Registered Nurses’ (RNs) own health risk behaviours and whether these influenced the provision of regular health education to patients. This two phase study used a sequential, mixed methods design. Phase one, involved an online survey distributed to registered nurses in a coastal regional town in Australia. Findings from phase one informed the eight semi-structured interviews obtained in phase two. When compared to the general population, the participants in this study reported a lower levels of smoking and met national guidelines for daily fruit and vegetable intake. In contrast, this group reported higher levels of alcohol consumption and lower levels of exercise. Commonly cited barriers to adhering to healthy lifestyles were shift work, long work hours and family commitments. While participants endorsed the importance of the role of the registered nurse in health education, they were not consistent in providing regular advice. Two themes emerged from the phase two interviews: role modelling and lack of priority. The central tenet is that registered nurses’ own health risk behaviours strongly influence attitudes and education provision but that improving perceived self-efficacy may be helpful in improving nurses’ delivery of healthy lifestyle education to patients at risk of non-communicable diseases. The renewed prioritisation of health promotion and prevention of non-communicable diseases nationwide presents the nursing profession with a prime opportunity to be change agents. A number of recommendations have been made in relation to curriculum, practice and policy. Future research should further explore strategies to support RNs in their health education roles and to become workplace health champions.
Acknowledgements

I would like to acknowledge and thank my supervisors, Dr Wendy Madsen and Ms Erika Langham, for their support, guidance and encouragement throughout this journey. Thanks also to the registered nurses who volunteered their time to participate in this research. To my family, I would like to give special thanks for their patience and support through this seemingly endless process.

ACKNOWLEDGEMENT OF SUPPORT PROVIDED BY THE AUSTRALIAN GOVERNMENT

This research higher degree candidature was supported under the Commonwealth Government’s Research Training Program / Research Training Scheme. I gratefully acknowledge the financial support provided by the Australian Government.

ACKNOWLEDGEMENT OF PROFESSIONAL SERVICES

Professional editor, Ingrid Kennedy, provided copyediting and proof-reading services, according to the guidelines laid out in the University-endorsed national guidelines, ‘The editing of research theses by professional editors’.

(Penny Heidke) 14/10/2016
Copyright Statement

I, Penny Heidke the undersigned author of the thesis, state that this thesis may be copied and distributed for private use and study; however, no chapter or materials of this thesis, in whole or in part, can be copied, cited or reprinted without the prior permission of the author and/or any reference fully acknowledged.

Penny Heidke
Declaration of Authorship and Originality

I, Penny Heidke the undersigned author, declare that all of the research and discussion presented in this thesis is original work performed by the author. No content of this thesis has been submitted or considered either in whole or in part, at any tertiary institute or university for a degree or any other category of award. I also declare that any material presented in this thesis performed by another person or institute has been referenced and listed in the reference section.

Penny Heidke
## Acronyms and Initialisms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
</tr>
<tr>
<td>AHA</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>AHPRA</td>
<td>Australian Health Practitioner Regulation Agency</td>
</tr>
<tr>
<td>AHS</td>
<td>Australian Health Survey</td>
</tr>
<tr>
<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
</tr>
<tr>
<td>AIN</td>
<td>Assistant in Nursing</td>
</tr>
<tr>
<td>BMC</td>
<td>BioMed Central</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>BNI</td>
<td>British Nursing Index</td>
</tr>
<tr>
<td>COPD</td>
<td>Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>CQIRP</td>
<td>Central Queensland Innovation and Research Precinct</td>
</tr>
<tr>
<td>DOH</td>
<td>Department of Health</td>
</tr>
<tr>
<td>EN</td>
<td>Enrolled Nurse</td>
</tr>
<tr>
<td>HWA</td>
<td>Health Workforce Australia</td>
</tr>
<tr>
<td>ICN</td>
<td>International Council of Nurses</td>
</tr>
<tr>
<td>NCD</td>
<td>Non-communicable diseases</td>
</tr>
<tr>
<td>NCHS</td>
<td>National Centre for Health Statistics</td>
</tr>
<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Survey</td>
</tr>
<tr>
<td>NMBA</td>
<td>Nursing and Midwifery Board of Australia</td>
</tr>
<tr>
<td>NNPAS</td>
<td>National Nutrition and Physical Activity Survey</td>
</tr>
<tr>
<td>PLoS</td>
<td>Public Library of Science</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
</tr>
<tr>
<td>SCT</td>
<td>Social Cognitive Theory</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
</tr>
<tr>
<td>SRHS</td>
<td>Self-Rated Health Survey</td>
</tr>
<tr>
<td>TAFE</td>
<td>Technical and further education</td>
</tr>
<tr>
<td>TNO</td>
<td>The Netherlands Organisation for applied scientific research</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
Table of Contents

Abstract ........................................................................................................................................... i

Acknowledgements ...................................................................................................................... ii

Copyright Statement .................................................................................................................... iii

Declaration of Authorship and Originality .................................................................................... iv

Acronyms and Initialisms ............................................................................................................... v

Table of Contents ......................................................................................................................... vii

List of Tables ............................................................................................................................... xi

List of Figures ............................................................................................................................... xii

Chapter 1. Introduction ................................................................................................................. 1

1.1 Background to the Study ...................................................................................................... 1
1.2 Purpose of Research Study ................................................................................................. 7
1.3 Study Design ....................................................................................................................... 7
1.4 Significance ......................................................................................................................... 8
1.5 Organisation of the Dissertation ....................................................................................... 9
1.6 Conclusion ......................................................................................................................... 10

Chapter 2. Literature Review ..................................................................................................... 11

2.1 Prevalence of Health Risk Behaviours and Influence on Health Education..................... 12
2.1.1 Smoking ....................................................................................................................... 14
2.1.2 Obesity, Diet and Exercise Behaviours ...................................................................... 17
2.1.3 Alcohol ....................................................................................................................... 20
2.1.4 Health Education and Nursing Practice .................................................................. 21
Chapter 3. Research Design ................................................................. 26

3.1 Introduction ............................................................................... 26
3.2 Structure of the Research Study .............................................. 26
3.3 Methodology ........................................................................... 27
  3.3.1 Philosophical Perspective .................................................... 27
  3.3.2 Mixed Methods Designs ....................................................... 30
  3.3.3 Phase One Design ............................................................... 34
  3.3.4 Phase Two Design ............................................................... 34
3.4 Ethical Considerations ............................................................. 36
3.5 Research Setting ..................................................................... 37
  3.5.1 Population, Sample and Recruitment .................................. 39
3.6 Data Collection Instruments .................................................... 40
  3.6.1 Phase One Survey Instrument Development ...................... 40
  3.6.2 Phase Two Interview Schedule Development ..................... 48
3.7 Data Collection ....................................................................... 49
  3.7.1 Phase One Data Collection .................................................. 49
  3.7.2 Phase Two Data Collection .................................................. 50
3.8 Analysis .................................................................................. 51
3.9 Phase One Data Analysis ......................................................... 51
  3.9.1 Created Variables ............................................................... 52
3.10 Phase Two Data Analysis ......................................................... 56
3.11 Data Quality ......................................................................... 58
  3.11.1 Phase One Quantitative Data Quality ................................. 58
  3.11.2 Qualitative Data Quality .................................................... 58
3.12 Conclusion ............................................................................ 59

Chapter 4. Phase One Results ............................................................ 61

4.1 Introduction ............................................................................ 61
4.2 Phase One Quantitative Response Rate .................................... 61
4.3 Phase One Demographic Data .................................................. 62
4.4 Professional Characteristics ..................................................... 63
  4.4.1 Employment Status ............................................................ 63
  4.4.2 Years of Experience ........................................................... 63
List of Tables

Table 3.1 Vegetable and Fruit serving sizes ................................................................. 44
Table 3.2 Physical activity calculations based on NHS .............................................. 54
Table 4.1 Participants who have had extra training in healthy behaviours ............... 64
Table 4.2 Number of areas in which extra training was received ............................. 65
Table 4.3 Comparison of participants’ weight categories (% prevalence) ............... 67
Table 4.4 Comparison of participants’ smoking status vs. Australian nurses and the
Qld and Australian general population. Sources: NHS, 2014–15 .......................... 68
Table 4.5 Percentage of participants that met alcohol guidelines ............................ 69
Table 4.6 Percentage of participants that met dietary guidelines according to age
groups ..................................................................................................................... 70
Table 4.7 Comparison of participants’ physical activity vs. the Australian population.... 71
Table 4.8 Risk factors used in the analysis for this section ....................................... 72
Table 4.9 Percentage of multiple risk factors compared to age groups ................. 73
Table 4.10 Barriers to delivering health education .................................................... 76
Table 4.11 Barriers to RNs own adherence to healthy lifestyles ............................... 77
Table 4.12 Strategies to overcome barriers to healthy behaviours .......................... 78
List of Figures

Figure 3.1 Explanatory sequential design ................................................................. 31

Figure 4.1 Proportion of participants by age category ............................................ 62

Figure 4.2 Years of Experience as a Registered Nurse .......................................... 63

Figure 4.3 Self-rated health. This figure illustrates participants’ self-rated health status from poor to excellent ................................................................. 66

Figure 4.4 Percentage of participants with multiple risk factors ............................ 72

Figure 5.1 Themes and Subthemes ........................................................................ 87
Chapter 1. Introduction

This study concerns itself with the lifestyles of registered nurses (RNs) and whether their personal health risk behaviours have any impact on the provision of health education to the people for whom they care. People have a degree of control over certain health risk behaviours, such as diet, smoking, physical activity and alcohol consumption. Many of these modifiable behavioural risk factors contribute to the increasing incidence of chronic lifestyle diseases globally, despite targeted intervention and educational programs. RNs are well situated to assist in tackling this rising crisis but face additional challenges in maintaining their own health and well-being as well as that of their patients. There have been some studies conducted globally assessing RNs’ own healthy behaviours and whether this impacts on the health education they provide for their patients. However, no studies have looked at all four health risk behaviours as well as the barriers and facilitators to both adherence and provision of education. This chapter introduces the reader to this study, firstly, presenting the background to the study while establishing the importance of this study in the Australian regional context. It then briefly describes the study design and concludes with an overview of the dissertation organisation.

1.1 Background to the Study

Chronic diseases are the most common, expensive and largely preventable conditions in health. Seven of the top 10 causes of death in 2014 were chronic diseases; including stroke, heart disease, cancer, type 2 diabetes, arthritis and obesity (CDC, 2017). Globally the occurrence of obesity is continuing to grow to epidemic proportions (Estabrook, Zapka, & Lemon, 2012). Obesity and smoking-related illnesses continue to be the principal contributors to premature deaths globally and have attracted significant attention at
national and international levels (Estabrook et al., 2012; Mbanya, Squire, Cazap, & Puska, 2011). Health risk behaviours are unhealthy behaviours that can be readily changed by individuals. It is widely accepted that four modifiable health risk behaviours - unhealthy diet, smoking, drinking too much alcohol and lack of physical exercise - are associated with preventable chronic disease (World Health Organization (WHO), 2012). Indeed these modifiable risk factors are responsible for the majority of chief non-communicable diseases worldwide. Arguably their eradication would have a significant impact reducing the premature heart diseases, stroke, type 2 diabetes and 40% of cancers (WHO, 2012).

Nationally, in Australia in 2011, alcohol consumption contributed to 5.1% of the total burden of disease and injury, tobacco accounted for 9.0%, obesity 5.5%, and physical inactivity 5% (Australian Institute Health and Welfare (AIHW), 2016). According to the AIHW (2016), a third of the burden could be prevented by decreasing the exposure to health risk factors including smoking, high Body Mass Index (BMI), alcohol consumption, high blood pressure and physical inactivity.

In Australia, 63.4% of adults are now classified as overweight or obese (11.2 million people), up from 56.3% in 1995 (Australian Bureau of Statistics (ABS), 2015). According to the 2011–2012 National Health Survey (NHS), 60% of Australians 15 years and over also do not engage in enough physical activity to benefit their health (ABS, 2013a). Additionally, these unhealthy behaviours have financial and social effects beyond the individual. According to a study by Gates, Succop, Brehm, Gillespie and Sommers (2008), obese workers have been found to be less productive, have more absences, and incur higher medical care utilisation and work cover for injuries (Finkelstein, Fiebelkorn, &
Wang, 2005), thus increasing the financial burden on employers (Schmier, Jones, & Halpern, 2006).

Approximately 14.5% of Australians smoke daily, with even higher reported rates of 16.1% in Queensland and 18% in regional areas (ABS, 2015; AIHW, 2016). Smoking is linked with greater risk of heart disease, stroke, peripheral vascular disease and cancer (AIHW, 2014a). Nationally, Australia’s smoking rates have fallen, with the prevalence improving from 28.6% in 1988. However, considering it is the principal cause of avoidable drug-related death and hospitalisation, this is still unacceptable.

Alcohol consumption is second only to tobacco smoking as an avoidable cause of drug-related death and hospitalisation in Australia (National Health and Medical Research Council (NHMRC), 2009). About one in five people in Australia over 14 years of age consumed alcohol at levels that placed them at risk of harm from alcohol-related injury or disease over their lifetime (AIHW, 2012). Australia’s alcohol consumption is also rated in the worst third of all countries surveyed (AIHW, 2012).

Nurses, as the largest group of health care workforce, are in a prime position to role model and facilitate healthy life style behaviour change of individuals. In 2016, there were 271,000 RNs registered to practise in Australia (Nursing and Midwifery Board of Australia (NMBA), 2016). As primary caregivers, this cohort spend more time with patients than any other health professional, ideally positioning them to be change agents role modelling and delivering healthy life style activities. Nurses are reportedly health representatives within their communities and workplaces (Maijala, Tossavainen & Turunen, 2016; Mdolo, 2012). Indeed there is an expectation from the general population that nurses are role models for health lifestyles, abstaining from smoking and maintaining a healthy weight.
Nurses are consistently identified in opinion polls as being perceived as one of the most ethical and honest professions, with people trusting and valuing their judgement and education (Roy Morgan Research, 2012; Gallup Organization, 2013). In spite of these expectations, it is increasingly evident that nurses’ personal health behaviours are actually in conflict with the healthy behaviours they expect of patients (Blake, Malik, Mo & Pisano 2011; Kyle, Neall & Atherton 2016). Kyle, Neall and Atherton (2016) report that the prevalence of overweight nurses and obesity is extensive within the profession with 69.1% of the 411 nurses in the cross-sectional study identifying as either overweight or obese. This observation is important as there is emerging evidence that nurses’ own health practices may negatively influence the quality of care patients receive (Esposito & Fitzpatrick, 2011). In an effort to understand this phenomenon researchers from a variety of disciplines are exploring the associations between the factors that inhibit nurses adherence to the health risk behaviours and role modelling behaviour (Dwyer, Bradshaw & Happell, 2009; Esposito & Fitzpatrick, 2011; Kemppainen, Tossavainen & Turunen, 2013; Perry, Gallagher & Duffield, 2015; Robson, Haddad, Gray & Gournay, 2012).

In Australia, it is part of the role of RNs to educate and promote healthy lifestyles to the patients for whom they care (Australian Nursing & Midwifery Accreditation Council [ANMAC] 2016). Existing literature (Aydin et al., 2012; Blake et al., 2011; Esposito & Fitzpatrick, 2011; Mo, Blake, & Batt, 2011) suggests that many nurses are providing education and advice related to lifestyle behaviours that they are clearly not abiding by themselves.
In Australia, with increased attention on preventing and decreasing lifestyle-related diseases, nurses are anticipated to be behavioural role models for their patients, families and the wider community (Malik, Blake & Batt, 2011; Rush et al., 2005). Burke and McCarthy (2011) warned that nurses displaying unhealthy lifestyle behaviours may adversely impact their patients and peers through behaviour modelling. When nurses adhere to healthy lifestyles it will not only enhance their own health but also increase their credibility as health educators and role models. Blake and Harrison (2013) also argue that when RNs don’t adhere to healthy behaviours, it not only impacts how people receive them as role models, it also impacts the education they deliver. Bandura (1977) argues that self-efficacy, or the level of control an individual has to change their behaviour, increases when they observe others similar to themselves or those they admire, succeeding. The logic being if a person sees a healthy behaviour practised by a nurse, they are more likely to want to do the same. The converse is also apparent where patients observe nurses smoking, they may be less likely to want to cease smoking themselves.

At the time of the commencement of this study, the competency standards for Australian nurses stipulated that the role of the RN will include the promotion and maintenance of health and prevention of illness for individuals (NMBA, 2006). The relevant competency standards 2.2 and 2.3 stated that RNs must consider their own individual health and well-being in relation to being fit for practice and that their personal values and attitudes should not be imposed on others (NMBA, 2006). In June 2016, these competency standards were revised and replaced with standards for practice that condensed the 10 competency standards to seven (NMBA, 2016). Standard 2.4 now stipulates RNs should “provide support and direct people to resources to optimise health-related decisions”
with standard three mandating that RNs must ensure their own health and well-being as well as “provide information and education to enable people to make decisions and take action in relation to their health” (NMBA, 2016). With these documented standards, in Australia and consistent with the recommendations in the United Kingdom (UK), ‘nurses must acknowledge that they are seen as role models for healthy living, and take personal responsibility for their own health’ (Prime Ministers Commission, 2010, p.69). It is concerning that some RNs are observed to not be looking after their own health and well-being. Coupled with this is the potential to then let these behaviours influence the value of healthy lifestyles they portray to patients and abstain from giving advice for fear of appearing hypocritical or not credible (Blake, Stanulewicz, & Griffiths 2017; Shepherd-Sinclair, 2014). There is evidence that nurses and health professionals in general that are unfit or who are smokers are less likely to engage in health promotion activities (Blake & Stanulewicz, 2017; Moxham, Dwyer & Reid-Searl, 2013).

In the nursing literature, there appears to be some confusion regarding the terminology of “health promotion”; the terms health education and health promotion seem to be used interchangeably throughout. The WHO established the Ottawa Charter to define health promotion as “the process of enabling people to increase control over, and to improve, their health”; whereas health education is defined as “any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes” (WHO, 2016). This study looks at the health education RNs give in relation healthy lifestyles, specifically smoking, alcohol consumption, healthy diet, physical activity and weight management.
1.2 Purpose of Research Study

The purpose of this study was to analyse the prevalence of health risk behaviours in RNs and determine if there was any relationship between health behaviours of RNs and the health education they provided. The precise aims of this study were to:

1. measure the prevalence of RN’s own adherence to the health risk behaviours they are expected to promote to patients in the sample region;
2. explore the beliefs RNs have regarding the impact of their own health risk behaviours on the health education advice they provide to patients.

1.3 Study Design

A two-phase sequential mixed method design was selected to explore the RNs prevalence of modifiable health risk behaviours and whether this had any influence on the health education they gave on these topics to their patients. Mixed method design was chosen for various reasons. Firstly, this study required a methodological approach that allowed the collection of data on multiple perspectives in a single study. Previous studies have been conducted, usually utilising a single method and which only present one perspective of the issue being explored and therefore the understandings attained are limited. The mixed method design in this study had the potential to extend the existing knowledge in this field by gaining a more rounded understanding. Secondly, the prevalence of the chosen health risk behaviours needed to be ascertained to provide initial data as to whether there were, in fact, any issues in this cohort. Finally, utilising interviews helped to get a better understanding of the beliefs and perceptions surrounding the phase one results.
Phase one of the current study involved a descriptive survey of demographics, the prevalence of the health risk behaviours, barriers to own adherence, the role of RNs in health education and barriers to the provision of health education. The purpose of this phase was to collect primary data related to the prevalence of these behaviours and explore any correlations with the RN’s own adherence and the provision of health education to patients. These results supported and informed the interviews developed for Phase two of the study. A more thorough discussion of the survey methodology and the results of Phase one are to be found in Chapters three and four, respectively.

Phase two of the study was performed after completion of Phase one. Phase two aimed to further explain the results of Phase one and draw out the beliefs and perceptions of the participants in their role in health education and whether their own behaviours influenced the education they provided. Phase two of the study consisted of interviews with eight participants resulting in two themes emerging from the thematic analysis of the transcribed interviews. Chapter three contains a more detailed discussion of the methodology used during Phase two and Chapter five presents the findings.

1.4 Significance

This research has its origins in the researcher’s experiences as an RN. Personal experience and observations suggest that nurses, more than other health professionals, are struggling to adhere to the health risk behaviours they are expected to encourage in the wider community. Therefore, the motivation is to investigate this observed dissonance by studying a sample of the nursing population and gathering data to guide strategies that can contribute to bridging the gap.
The value of this research relates to highlighting the barriers nurses experience in adopting health risk behaviours themselves and in providing health education to their patients. This improved understanding can help inform future strategies in addressing discrepancies in the health risk behaviours and education within nursing. There have been no studies found that focus on the prevalence of all four behavioural factors and their influence on the provision of health education in RNs in regional Australia. Further, there were minimal mixed method studies on this topic. Therefore, this research study aims to contribute to what is already known and has been researched.

1.5 Organisation of the Dissertation

This dissertation comprises seven chapters. The first chapter has introduced the topic, outlined the problem and provided reference to where health education is situated in respect to RNs standards for practice as stipulated by their governing body. It has also provided an overview of the dissertation including the background to the study, research aims and purpose and significance of the study.

Chapter two critically examines the available literature on the topic and gives a critique of previously conducted research studies, both nationally and internationally, on health risk behaviours in RNs and the provision of health education.

Chapter three then details the research design of mixed methods methodology used to conduct this study. Pragmatism, as a philosophical perspective, is discussed as underpinning the research question and study design. The theoretical framework of Social Cognitive Theory (SCT) and its application to this study is considered. Also, the methods of data collection, analysis and the ethical considerations of the study are contained in this chapter.
Chapter four presents the results of Phase one of the study. The survey results are presented in detail and a discussion of the main conclusions drawn to inform Phase two of the study.

Chapter five consequently presents the findings of Phase two of the study. The two main themes to emerge from this study are presented. Subthemes are outlined with exemplars to illustrate the participants’ responses. The themes are then explored in the literature.

Chapter six explores the two main themes further, specifically in the context of nursing. Looking more in-depth, these themes are discussed in reference to current literature and policy.

Finally, Chapter seven presents a summary of the study, aims, methods and findings as well as the implications for policy makers, tertiary institutions, healthcare facilities and nursing practice recognised as a result of the findings. The strengths and limitations are addressed next. Finally, the chapter concludes with recommendations for future research and practice.

1.6 Conclusion

This chapter has provided an introduction to the research study and presented an overview of the dissertation layout. Chapter two provides a critique of the existing literature and contemporary research on RNs regarding the identified health behavioural risk factors of smoking, unhealthy diet, excessive alcohol and lack of physical activity. It also explores literature surrounding the issues of RNs as role models and their role in health education.
Chapter 2. Literature Review

This chapter presents an exploration of current literature appraised to give the researcher context for this study. The aim of the review is to explore and provide a critique of the current literature on RNs regarding the prevalence of the identified health behavioural risk factors of smoking, unhealthy diet, excessive alcohol consumption and insufficient physical activity. It then also explores literature surrounding the issues of RNs and their role in health education. Perceptions of RNs as role models for their patients and the relationship between RNs own healthy behaviours and their promotion of healthy behaviours to their patients is also explored.

The literature review method followed the phases defined by Aveyard (2010) to develop a rigorous approach to searching for relevant literature; first identifying the research topic, followed by identifying the research question; next the development of inclusion and exclusion criteria, followed by identifying keywords and finally performing the electronic search. Search terms were developed from the research questions. Keywords included: behavioural risk factors, healthy behaviours AND nurs*, overweight, role model, patient education, health education. All relevant databases were searched, these included Google Scholar, Cochrane Collaboration, British Nursing Index (BNI), Scopus, CINAHL Complete and Health Collection. The reference lists of the most relevant journal articles were also searched.

Inclusion criteria:

- Primary research concerning RNs and modifiable risk factors: diet, BMI, obesity, tobacco smoking, alcohol consumption, and physical activity;
• Research concerning RNs as role models, RNs and health education;

• English language only;

• Younger than 10 years old.

Exclusion criteria:

• Primary research concerned mostly with health professionals other than nurses, stressors, shift work, other non-modifiable health issues;

• Languages other than English;

• Unpublished literature.

2.1 Prevalence of Health Risk Behaviours and Influence on Health Education

To facilitate the database searches, the behaviours chosen were based on the most common modifiable lifestyle-related behaviours, as reported by the WHO, that are responsible for the majority of non-communicable diseases (NCDs) worldwide (2016). These are unhealthy diet, tobacco smoking, obesity, excessive alcohol consumption and insufficient physical activity. There are several international studies that have investigated the prevalence of unhealthy lifestyle behaviours in nurses. However, while there were many studies that related to individual risk behaviours, there was a dearth of research that included all the health risk behaviours chosen for this study. To this end, this literature review will initially critique the studies that have included multiple lifestyle behaviours before going on to those that measured individual behaviours. Table 2.1, below delineates studies related to multiple lifestyle risk factors to those related to single lifestyle risk factors.
Table 3.1 Summary of studies related to multiple vs single lifestyle risk factors

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Lifestyle risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakshi, et al.</td>
<td>2015</td>
<td>UK</td>
<td>Physical activity, alcohol, smoking</td>
</tr>
<tr>
<td>Burke &amp; McCarthy</td>
<td>2011</td>
<td>Ireland</td>
<td>Physical activity, alcohol, smoking</td>
</tr>
<tr>
<td>Seychell &amp; Reeve</td>
<td>2016</td>
<td>Malta</td>
<td>Diet, obesity</td>
</tr>
<tr>
<td>Gifford, et al.</td>
<td>2013</td>
<td>NZ</td>
<td>Smoking</td>
</tr>
<tr>
<td>El-Khushman</td>
<td>2008</td>
<td>Jordan</td>
<td>Smoking</td>
</tr>
<tr>
<td>Sarna, et al.</td>
<td>2010</td>
<td>US</td>
<td>Smoking</td>
</tr>
<tr>
<td>Merrill, et al.</td>
<td>2008</td>
<td>Jordan</td>
<td>Smoking</td>
</tr>
<tr>
<td>Willaing &amp; Ladelung</td>
<td>2004</td>
<td>Denmark</td>
<td>Smoking</td>
</tr>
<tr>
<td>Belletsioti-Stika &amp; Scriven</td>
<td>2006</td>
<td>Greece</td>
<td>Smoking</td>
</tr>
<tr>
<td>Dwyer, et al.</td>
<td>2009</td>
<td>Australia</td>
<td>Smoking</td>
</tr>
<tr>
<td>Moxham, et al.</td>
<td>2013</td>
<td>Australia</td>
<td>Smoking</td>
</tr>
<tr>
<td>Miller, et al.</td>
<td>2008</td>
<td>US</td>
<td>Obesity</td>
</tr>
<tr>
<td>Englesius</td>
<td>2007</td>
<td>US</td>
<td>Obesity</td>
</tr>
<tr>
<td>Wong, et al.</td>
<td>2010</td>
<td>Hong Kong</td>
<td>Diet</td>
</tr>
<tr>
<td>Nicholls, et al.</td>
<td>2016</td>
<td>Various</td>
<td>Diet</td>
</tr>
<tr>
<td>Peplonska, et al.</td>
<td>2014</td>
<td>Poland</td>
<td>Physical Activity</td>
</tr>
<tr>
<td>Stanton, et al.</td>
<td>2015</td>
<td>Australia</td>
<td>Physical Activity</td>
</tr>
<tr>
<td>Schluter, et al.</td>
<td>2012</td>
<td>AUS, NZ</td>
<td>Alcohol</td>
</tr>
<tr>
<td>Scott</td>
<td>2010</td>
<td>NZ</td>
<td>Alcohol</td>
</tr>
<tr>
<td>Servodidio</td>
<td>2011</td>
<td>US</td>
<td>Alcohol</td>
</tr>
<tr>
<td>Mostofsky, et al.</td>
<td>2016</td>
<td>US</td>
<td>Alcohol</td>
</tr>
</tbody>
</table>
A study was conducted in the United Kingdom (UK) by Bakhshi, Sun, Murrells and While (2015) of 623 RNs utilising a self-administered questionnaire measuring physical activity, alcohol use and smoking as well as actual body size, physical activity and health education practices. The results showed 95% of participants rated their health status as good or very good despite 11% being current smokers, 28% did not meet the daily recommendations for physical activity, 88% consumed alcohol of which 25% were at risk of hazardous drinking, and 47% of participants stated they encouraged physical activity to some degree, although only 4% actively promoted it to their patients. The researchers argued that physically active RNs were more likely to promote physical activity to their patients than inactive nurses (Bakhshi, et al., 2015). Similarly, Burke and McCarthy (2011) explored 182 Irish student nurses’ lifestyle practices, using self-reported surveys. They reported that 20% smoked daily, 96% drank alcohol, 19% reported surpassing the weekly safe levels for alcohol consumption, while 73% exercised regularly (Burke & McCarthy, 2011). There was no measurement of the type of exercise to compare to guidelines in the latter study. Despite this, these rates are fairly consistent and both sets of authors acknowledged limitations including the surveys were self-reported and conducted at single sites.

2.1.1 Smoking

Gifford, Walker, Clendon, Wilson and Boulton (2013) assert that RNs who smoke report being conflicted as they have knowledge and understanding of the consequences of this behaviour. There is also the additional professional obligation of patient education as mandated by their registering bodies and for being role models for healthy behaviours (Gifford, et al., 2013). A quantitative study conducted via a self-reported questionnaire
by El-Khushman, Sharara, Al-Laham, and Hijazi (2008) in Jordan of 600 health care workers, of which 42% were nurses, discovered that 49% of the male nurses and 17% of the female nurses smoked. Of those that did not smoke, 78% stated that they consistently asked their patients about their smoking history and encouraged them to quit; however, only 36% of the smokers advised their patients of the same (El-Khushman et al., 2008).

Another study by Sarna, Bialous, Sinha, Qing and Wewers (2010) of American nurses, specified that smoking rates amid RNs has dropped from 18.3% in 1990 to 10.7% in 2007 but has remained high among non-RNs (20.55%). These statistics are better than those cited of Australian RNs who smoke, which is 14% (ABS, 2013).

Sarna et al. (2010) assert that a major barrier to providing smoking cessation education and interventions with patients is RNs who themselves continue to smoke. Another study of 262 nurses also argued that those who were current smokers lacked confidence and saw themselves as unqualified to advise patients making them less likely to counsel their patients to quit smoking (Merrill, Madanat, Kelley & Layton, 2008). These findings were consistent with another study by Willaing and Ladelung (2004) of 1,429 health professionals in Denmark; additionally, they found that smokers undervalued the adverse health consequences of smoking as a risk factor. Therefore, encouraging and facilitating RNs to stop smoking will not only benefit the RN personally from being smoke-free but just as importantly, benefit their patients.

A study by Beletsioti-Stika and Scriven (2006) on smoking in Greek qualified nurses and their inclination to quit, discovered that of 308 nurses almost 50% were current smokers and another 25% were ex-smokers. The two main motives they presented for smoking
were pleasure and to relieve stress; nevertheless, most agreed nurses play a significant role in modelling healthy behaviours for patients (Beletsioti-Stika & Scriven, 2006).

An Australian study by Dwyer et al. (2009) of 289 mental health nurses, determined that smoking rates were lower (16%) than the general population, but that the smokers were considerably less likely to believe that health facilities should promote a healthy environment. The research aims were similar to the current study, examining the mental health nurses’ smoking behaviour and their role in health education, as well as whether their smoking status influenced their attitudes. Most participants believed they had the knowledge and skills necessary to provide health education, though the authors questioned how credible consumers would consider the current smokers (Dwyer et al., 2009). Another more recent Australian regional study of 64 graduate nurses and 153 nursing students on the smoking rates and behaviours and attitudes of nurses towards assisting patients to cease smoking found that nurses are conscious that they are role models and that they have a significant role in influencing the modification of patient behaviours. However, age and smoking status of nurses significantly influenced their actions, finding that those who smoked were less likely to place value in promoting smoking cessation to their patients (Moxham, Dwyer & Reid-Searl, 2013).

In 2014 – 2015, the rate of smoking for adults in Australia was 14.5%, with 12.1% of women smoking daily (ABS, 2016). The proportion of adults who were current smokers daily smokers in Queensland was 15.2% in 2013, with females (13.3%) smoking less than men (17%) (ABS, 2016). Regional areas showed adult smoking rates of 18.5% (AIHW, 2016). No data could be found that showed the breakdown between females and males in the regional study site. The studies related to smoking among nurses suggest that while
rates of smoking vary internationally, there is a consistent inconsistency regarding nurses who smoke and the health education they provide to patients. Examination of obesity within nurses reveals similar issues in diet and exercise patterns.

2.1.2 Obesity, Diet and Exercise Behaviours

While now recognised as more complex than the “energy in—energy out” formula suggests, unhealthy diet and lack of adequate physical exercise remain important lifestyle behaviours that contribute to obesity and overweight. This section looks firstly at studies on obesity alone in nurses, then those that focus on both exercise and physical activity together, and finally on the studies that focussed just on diet then just on physical activity.

Miller, Alpert and Cross (2008) found in a quantitative study of 760 American RNs, that 54% were overweight or obese and of these, 53% reported that they had a lack of motivation to make the necessary lifestyle changes. This figure compares to the Centre for Disease Control and Prevention figures for overweight and obesity in the United States (US) adults of 73.7% (Ogden & Carroll, 2010). Of relevance to this study was that 76% of these nurses did not broach the issue of weight loss with obese or overweight patients.

Another study of 66 RNs working in a cardiac intensive care unit, Englesius (2007) found that 86% of these nurses were overweight, compared to 66% of the general population in the US at that time. This figure is significant, considering obesity is one of the principle contributing factors towards cardiac problems and cardiac nurses are expected to provide lifestyle education for their patients on a daily basis (Englesius, 2007).

Zapka, Lemon, Magner and Hale (2009) had comparable results in 2009 in a survey of 194 American nurses from six hospitals. They observed that the majority of nurses (65.4%) were overweight or obese. Nurses were also found to not be engaging in physical activity
or healthy eating habits to manage their weight and made strong recommendations that hospitals support healthy habits and active obesity management. A longitudinal study of health professionals in the UK, found that of the 1.2 million healthcare professionals registered in the National Health System, over 53% are obese (Department of Health (DOH), 2009) compared to 24.5% of the general population in the UK at that time. This was in spite of various strategies and incentives being implemented to increase physical activity, promote healthier food choices, increase workplace funding to encourage healthy workplaces and weight management services and support throughout the 12 months of the study.

Studies on dietary behaviours in nurses tended to focus on barriers to healthy eating, shift work and the physical workplace were identified in the following studies. When looking at contributing factors to unhealthy dietary habits in nurses, a study in Hong Kong of 378 nurses found that working shift work was more likely to be associated with abnormal eating behaviours (Wong, Wong, Wong & Lee, 2010). This is echoed in a more recent study by Seychell and Reeves (2016) on the diets of emergency nurses, showing that shift working nurses had significantly higher caloric intakes and 40% of nurses had fat intakes higher than recommended levels, the results also showed most nurses fell into the overweight category according to BMI and waist circumference. An integrative literature review including 26 papers found that barriers to healthy eating cited by nurses were long working hours and shift work, accompanied by social factors, low self-efficacy and the physical working environment such as a lack of availability of healthy food in hospital cafes (Nicholls, Perry, Duffield, Gallagher & Pierce, 2016). These authors also looked at
facilitators of healthy eating and found very few. Further studies looked at shift work as also a barrier to keeping physically active.

In comparison, a study by Peplonska, Bukowska and Wojciech (2014) investigated the relationship between shift work and physical activity in nurses in 354 nurses and midwives that worked rotating night shifts and 372 who worked days only. Interestingly, in the demographics, over 60% of the participants were classed as overweight or obese according to their BMI. Despite this, 92% of the participants met the guidelines for physical activity of at least 150 mins a week, mostly due to activity at work but less than 8% reported meeting the guidelines in recreational activities. Stanton, Happell and Reaburn (2015) surveyed the self-reported physical activity and exercise recommendation practices of 34 mental health nurses, 74% reported achieving moderate to high levels of exercise. However, only 21% reported giving regular exercise advice to their patients. This percentage is much higher than normally recorded, prompting the authors to question whether the respondents had over-reported their physical activity due to misclassification or social desirability bias.

When looking at the figures of overweight and obesity in the general population, in 2014-2015, 64.3% of adults in Australia were overweight or obese with 56.3% of women falling into these categories (ABS, 2017). The regional study site figures for overweight or obese adults are slightly higher than the national figures at 66.9% (AIHW, 2016). Adherence to Australian dietary guidelines for daily intake of fruit and vegetables in Australian adults in 2014-2015 were 49.8% for fruit and 7% for vegetables with only 5.1% meeting the guidelines for both fruit and vegetables (ABS, 2017), with women meeting the guidelines more than men. ABS figures for Australian adults’ adherence to the physical activity
guidelines show that 55.5% exercise sufficiently for their health, with women slightly less than men at 53.3% (ABS, 2017). In Queensland, 43.9% met the guidelines for physical activity (ABS, 2017). There are no figures available for diet and exercise specific to the regional study site.

2.1.3 Alcohol

Limited studies have been done into the alcohol consumption of nurses in recent years. One large cross-sectional study of 4,419 Australian and New Zealand nurses and midwives undertaken by Schluter, Turner and Benefer (2012) found many nurses engage in harmful daily drinking and this may be related to long working hours. Prevalence of alcohol abuse in nurses has been reported by Scott (2010) at 6–10% of the nursing population and an American study into oncology nurses suggests that it could be up to 15% and suggests that they may use alcohol to mask emotional pain or as a stress release linked to short staffing (Servodidio, 2011). A more recent study on alcohol consumption and its effects on a variety of health outcomes in RNs reported that those who had a low to moderate intake (equivalent to the Australian lifetime risk guidelines) and drank regularly (more than three days a week) had a lower risk of mortality than those who did not drink or drank substantially more (Mostofsky, Mukamal, Giovannucci, Stampfer, & Rimm, 2016).

According to the Australian guidelines surrounding the consumption of alcohol, in 2014-2015, 17.4% had consumed more than two standard drinks per day on average, exceeding the lifetime risk guideline, of which women fared better with 9.3% exceeding the guideline (ABS, 2017). Queensland, however showed higher figures of 18% exceeding the lifetime risk guidelines (ABS, 2017). When it came to the
second guideline indicating single occasion injury risk, 44% of Australian adults had exceeded the guideline, with 31.7% of them being women (ABS, 2017).

2.1.4 Health Education and Nursing Practice

As can be seen in some of the studies previously discussed, patient education may occur more regularly when healthy behaviours are practised habitually by RNs. One theme among RNs was that they understood the value of health education, but that there was minimal time in the workday for giving health education as their focus was the acute illness or predominant reason for hospitalisation. Other common barriers were knowledge, confidence and whether they believed it was part of their job or not (Ashby, et al., 2012; DiNapoli, Sytnyk & Waddicor, 2011; Elwell, Powell, Wordsworth, & Cummins, 2014; Greenwood & Lewis, 2015; Hessler & Seigrist, 2011; Small, Anderson, Sidoro-Arcoleo & Gance-Cleveland, 2009).

Research around nurses and the provision of health education to children was found, with the following two studies identifying both internal and external barriers. Blake and Patterson (2015) conducted a quantitative questionnaire in the UK of 67 paediatric nurses and found that 84% believed they should be role models for health, however 47% felt they should educate their patients on healthy behaviours more. This study also reported that 77% of participants felt patients and families would heed advice better from nurses who appeared to be following it themselves and that 48% found it difficult to give health education on the behaviours they did not adhere to themselves (Blake & Patterson, 2015). They also cited barriers including lack of time, need for training, and that the education should be provided by other health professionals. Another mixed methods study of 62 RNs in Sweden highlighted barriers including time, their own knowledge in general of
healthy behaviours, diets and nutrition and confidence in broaching the subject with patients and families who are obese (Ljungkrona-Falk, Brekke & Nyhom, 2014).

It appears that where the provision of education is structured into the RNs specific role it is carried out on a more regular basis, however even this has its issues as identified in the following publication. Klein, Sendall, Fleming, Lidstone and Domocol (2012) undertook a qualitative study of 16 school nurses and found that though health education is an integral part of their role, and it is recognised that they are in an ideal position to undertake health promoting education activities with students, there are many barriers. The results indicated that some RNs did not believe it was part of their role, and that they often met resistance from both teachers and principals to them taking up class time, the authors concluded that there needed to be clear role descriptions for school nurses and this needs to be communicated effectively to both the RNs and the schools. Another report conducted in China, which consisted of interviews with 16 hospital-based nurses found understanding of the need for health education was high, however issues related to the patients perceived health literacy, patient resistance, lack of time and energy and lack of knowledge were cited as barriers to the provision of same (Whitehead et al., 2008). Primary health nurses are potentially key providers of education on healthy behaviours, however research conducted in Australia of 384 clinicians (199 RNs) on the prevalence of advice provided on smoking, inadequate fruit and vegetable intake, risky alcohol use and physical inactivity showed that this is not occurring consistently (McElwaine et al., 2014). Smoking was assessed most with 51% giving advice on quitting, the least assessed was fruit and vegetable consumption at 34%, 56% gave advice on physical inactivity and 40% on alcohol consumption. Of the participants themselves, 3% were at risk for smoking, 78%
for fruit or vegetable under consumption, 40% for alcohol overconsumption and 58% of physical inactivity (McElwaine, 2014).

Studies exploring the relationship between RNs’ only own healthy behaviours and provision of health education were limited, often including physicians and other health professionals (Ashby, et al., 2012; Fie, Norman & While, 2013; Howe, et al., 2010). A review by Fie et al. (2013) conveyed that clinicians who engage in high levels of physical exercise are usually more positive towards the benefits of exercise and are more likely to recommend patients exercise regularly. In a more recent study, Lobelo and de Quevedo (2014) proposed that the physical activity habits of health professionals directly influenced the provision of exercise counselling, and maintained the necessity for health professionals to accept role model status in the promotion of exercise to their patients.

A perceived relationship, based on these studies, has been documented between the health behaviours of RNs and the health education they give on these behaviours to the patients they care for. Nurses, as the biggest group of health professionals and those who spend the most time with patients, are in an ideal position to influence patient health by teaching healthy behaviours (Miller et al., 2008). As has been highlighted a number of times in this literature review, when RNs themselves choose to engage in risky health behaviours such as smoking or obesity, they may be less likely to advise patients on the same issues. Coupled with this lack of confidence of RNs to provide health education is the issue of whether patients will heed any advice given if they do not feel the RN is credible. A quasi-experimental study by Hicks et al. (2008) on patient confidence in health education from overweight or weight-appropriate RNs concluded that RNs of healthy weight instil more confidence in their teaching and that RNs need to be conscious of
patients’ perceptions. Thus, the impact is not only on the RNs themselves but also the wider population.

Most of the previous studies on health behaviours have been quantitative, and while supplying prevalence rates of the various behavioural risk factors, they do not sufficiently explain the inconsistencies between RNs own health and the impact of this on the health education they give. Only one recently published protocol for a systematic review aims to address the prevalence of the four health-related behaviours, nevertheless, the review itself has not yet been published (Neall, Atherton & Kyle, 2016). There have been no studies found that focus on the prevalence of all four behavioural factors and their influence on the provision of health education in RNs in regional Australia. Further, there were minimal mixed method studies on this topic. Therefore, this research study aims to contribute to what is already known and has been researched.

A gap in the literature exists of RNs’ adherence to all four healthy behaviours according to the current Australian guidelines and the relationship between this and the provision of education on these behaviours to their patients. If the barriers to both adherence to healthy behaviours in RNs and to the provision of health education could be established, then strategies to overcome these barriers could be formulated and implemented. This could in turn have many benefits to the nurses themselves, such as better stress management, less injuries, prevention and reduction in chronic disease, decreased sick leave, increased confidence in themselves as credible role models and less cost for facilities. Increased perception of credibility from patients and the provision of consistent health education has the potential to decrease overall risk of chronic disease in patients as well as the same benefits as the RNs.
In conclusion, this chapter has discussed the current literature surrounding the prevalence of health behavioural risk factors in RNs both nationally and internationally. Literature around some of the barriers to adhering to healthy lifestyles were covered. This chapter also incorporated a discussion on studies which investigated RNs roles in health education and how their behaviours influence the provision of health education. The final section of this literature review highlighted the gaps in the research of these issues.
Chapter 3. Research Design

3.1 Introduction

In the previous chapter, a review of the relevant literature was provided in relation to the healthy behaviours of RNs and how this relates to their provision of health education for patients. This chapter contains an outline of the research design used to investigate RNs’ adherence to healthy lifestyles and their beliefs as to the impact of their own health risk behaviours on the health education they provide to patients. It provides the philosophical viewpoint of the pragmatic paradigm within which research judgements were made. This includes the justification for the methodology selected, and the mixed methods design utilised to conduct the research. The setting, sample selection and recruitment strategies for both Phase one and Phase two of the study are then described. This is followed by details about the development of the survey tool and formation of questions for the interviews. Next, the analysis techniques for Phase one of the study are provided, followed by those used in Phase two. Finally, ethical considerations are taken into account for both phases including informed consent, anonymity of participants in the survey and confidentiality of information from interviewees and all resulting data.

3.2 Structure of the Research Study

The research aim is to understand the prevalence of RNs’ own adherence to the health risk behaviours they are expected to promote to patients and the wider community and to understand the perceived dissonance between education, training and health behaviours of RNs.
Thus, the first research question is:

*What is the prevalence of Registered Nurse’s own adherence to the health risk behaviours they are expected to promote to patients in the sample region?*

A second research question is:

*What beliefs do RNs have regarding the impact of their own health risk behaviours on the health education advice they provide to patients?*

A mixed methods approach was decided as the design choice for this research as the collection of quantitative data alone may not provide insight into the beliefs of RN’s regarding the impact of their own behaviours on the health education they provide, similarly the collection of qualitative data alone may not adequately capture the prevalence of the health behaviours in relation to the guidelines.

### 3.3 Methodology

#### 3.3.1 Philosophical Perspective

There are two overarching paradigms or worldviews in research, positivism and constructivism, where researchers usually either use quantitative or qualitative methods to either prove their theories or understand the topic being researched. From these, more philosophical orientations arise, those most defended and documented being: logical positivism; post-positivism; pragmatism; and constructivism (Tashakkori & Teddlie, 1998). Creswell and Plano Clark (2011) mandate that post-positivism is generally associated with quantitative approaches, constructivism and participatory are generally associated with qualitative research, and finally, pragmatism is typically associated with a mixed methods approach. This study is placed within a pragmatic theoretical perspective.
Both research questions are informed by the pragmatic perspective, this perspective also flows through the data collection and analysis.

The philosophy of pragmatism, according to Tashakkori and Teddlie (1998, p. 30), is to study what “interests and is of value to you, study it in the different ways that you deem appropriate, and use the results in ways that can bring about positive consequences within your value system”. Pragmatic research is driven by anticipated consequences, beginning with what we think is known and looking to the consequences we desire, we pick and choose how and what to research (Plano Clark, 2008). Therefore, values also play a large role in interpreting the results. Pragmatists believe that “researchers may be both objective and subjective in epistemological orientation over the course of studying a research question” (Tashakkori & Teddlie, 1998, p. 25). Pragmatism was identified as the most appropriate for this study as it helps to shed light on how research approaches can be mixed effectively and in ways that offer the best opportunities for answering important research questions (Johnson & Onwuegbuzie, 2004).

By pragmatism, we mean to search for workable solutions through the practice of research (e.g., follow the fundamental principle of mixed research, including the use of designs and criteria that are situation and context appropriate) to help answer questions that we value and to provide workable improvements in our world (i.e., help in bringing about desired outcomes) (Onwuegbuzie & Johnson, 2006, p. 54).

This study rejects the incompatibility proposal which contends that quantitative and qualitative research paradigms and methods cannot be combined in a useful way (Teddlie & Tashakkori, 2009). The traditional contrasts of conservative quantitative and qualitative
approaches can limit the scope of inquiry and utility of findings. The differing paradigms do not have clear lines of distinction, rather there is an overlap, providing justification for the integration of the two paradigms in certain research studies (Bergman, 2008; Cresswell & Plano Clark, 2011). According to Tashakkori and Teddlie (2003, p. 5), mixed methods research approaches are termed the “third methodological movement”, assuming that quantitative and qualitative were the first two movements. This study is based on the belief that forms a fundamental principle in mixed research: that by combining quantitative and qualitative methods and collecting diverse types of data best provides an answer to the practical questions of the everyday and the conclusions benefit from complementary strengths and non-overlapping weaknesses (Johnson, Onwuegbuzie & Turner, 2007). Johnson and Onwuegbuzie (2004) suggest that mixed methods approaches bridge the divide between qualitative and quantitative proponents. Creswell and Plano Clark (2011) propose that more than one worldview can be used in a mixed methods study and that multiple paradigm approaches allow the researcher to shift from a post-positivist perspective to that of a constructivist approach. This multiple approach is useful in a mixed method design where the researcher moves from a survey, providing mostly experiential measures, to interviews to build a deeper awareness of the research topic. To answer the two research questions, this project gathered quantitative evidence to gauge the prevalence of health behaviours in RNs, which then led into the qualitative study examining the beliefs of RNs as to the impact their behaviours have on their role in health education.
3.3.2 Mixed Methods Designs

As a methodology, mixed methods involves the planned mixing of qualitative and quantitative methods at a predetermined stage of the research process, be it during the initial study planning, the process of data collection, data analysis or reporting, in order to better answer the research question. Creswell and Plano Clark (2011) assert that there are four basic mixed methods designs: convergent parallel; exploratory sequential; explanatory sequential; and embedded. Each of the designs has their own distinguishing rules regarding when and how the data are collected, mixed and reported upon. The explanatory sequential design involves collecting quantitative data in the first phase followed by the collection of qualitative data in the second phase. This design uses the qualitative data to explain the initial quantitative data results and is useful when the purpose is to assess trends and relationships (Cresswell & Plano Clark, 2011). The first step is to design, implement and analyse an initial quantitative phase of the study. The second step is to determine which results will be followed up, and use the findings to determine the second, qualitative strand. This step is also the point of connection for the separate phases. The final phase is to interpret if and how there is an association by way of the second phase results explaining the first phase.

Following Johnson et al. (2007), this study considered both the quantitative and qualitative data as making equally valid contributions to the perceptions gained from the research. As an equivalent status design, this study employed an explanatory sequential mixed methods design: first gathering quantitative data from an online survey comprising questions concerning the demographics, healthy behaviours, and thoughts on the role of the nurse in health education and the participants’ provision of this information to their
patients. Findings from this first phase informed the development of the interview questions used in the second qualitative phase (Plano Clark, 2008). A diagrammatic representation of this mixed method study is presented in Figure 3.1.

**Phase one**

**Phase two**

![Diagram of mixed method study](image)

**Figure 3.1 Explanatory sequential design (Adapted from Cresswell & Plano Clark, 2011, p. 69)**

Mixed methods research designs are used to gather data from several perspectives, and allow researchers to triangulate their findings, leading to more robust conclusions than those which may be drawn from a quantitative or qualitative study alone (Creswell, 2009). One of the qualities of mixed methods research is the ability to combine deductive and inductive reasoning. Teddlie and Tashakkori (2009) describe deductive analysis as being in accordance with an existing framework, while inductive analysis is the discovery of patterns and themes in the data.

The mixed methods design used in this study is a non-experimental, explanatory design chosen to explore the relationship between RNs own healthy behaviours and health education activities through quantitative data and to provide a qualitatively explanation of as to why these nurses may not adopt a particular health-related behaviour.

The theoretical framework underpinning this study is based on the Social Cognitive Theory (SCT) proposed by Bandura (1986, 2011). The details of this framework and its relevance to the current study will now be discussed. SCT (Bandura, 1991) provides a guide for
explaining the biopsychosocial process that motivate an individual to engage in specific behaviours. According to the SCT, a change in an individual’s behaviour is influenced by their personal self-belief and outcome expectations. An important self-belief is self-efficacy and plays a principal role in exploring behaviour change (Bandura, 1977). Perceived self-efficacy refers to confidence in one’s ability to successfully perform a specific behaviour in a variety of situations (Bandura, 1986). Promoting behaviour change and maintenance of that behaviour, SCT focuses on a function of expectations about one’s ability to perform certain behaviours and the expectation of the outcome resulting from performing that behaviour.

The SCT has been identified as imperative and perhaps one of the more influential behavioural change theories in nursing and health education (Whitehead, 2001). SCT has the ability to highlight an individual’s reasons for considering and possibly adopting any health-related behavioural change, for example, their belief, understanding, attitude, values, motivation and self-efficacy. Any health education intervention is more likely to have a successful outcome if the reasons are understood as to why an individual may or may not adopt a particular health-related behaviour before embarking on a program of change (DeAmicis, 1997; Whitehead, 2001). With regards to this study, the key factors here are role modelling and confidence in overcoming barriers to both individual behaviours and provision of education. A core concept of SCT is that of outcome expectations—what consequences (good or bad) the individual believes are most likely if they undertake a particular behaviour—and that these beliefs shape the decisions they make about what actions to take (Bandura, 1991). Therefore, an RN would be more likely to undertake a healthy behaviour if they believed it would either prevent or relieve them
of an undesired consequence, for example, type 2 diabetes or coronary artery disease; or that they would experience a beneficial consequence, such as finding it easier to breathe and walk up the stairs. They would also be more likely to have confidence in providing health education if they believed their patients thought them credible sources (Sharma, 2016).

Another core concept is perceived self-efficacy, which reflects individual’s beliefs and confidence about whether they can achieve success at a particular task (Bandura, 1997). This can be influenced by the person’s past experiences with success, the opinions and support of others around them and their physiological state (Bandura, 1997). Therefore nurses are more likely to adopt healthy behaviours if they believe they can succeed, they feel they have personal and operational support or the perceived barriers are not too great. Although SCT was not the theoretical framework when the study began, it became evident through the course of analysis that this provided a useful theoretical framework through which to interpret the results.

In Phase one, the first part of the survey aimed to collect the demographics of the cohort, and an overview of the prevalence of each health risk behaviour. These were rated against the Australian guidelines for each behaviour to get a baseline. Barriers to providing health education to patients and proposed strategies to overcome these were also explored. Consistent with the sequential explanatory method, Phase two extended findings from Phase one to provide an explanation as to why these nurses’ may or may not adopt a particular health-related behaviour and if participants’ values, beliefs and perceptions of their individual health risk behaviours impacted on the provision of health education.
Whilst SCT was chosen as the most appropriate theory for this study, it does have limitations in that it assumes that changes in the environment will lead to changes in the individual, when this may not always be true (Gibbison & Johnson, 2012). It is unclear as to the extent each factor—person, behaviour and environment—plays into actual behaviour change and if one is more influential than the other.

3.3.3 Phase One Design

This phase used a descriptive, exploratory survey design collecting data from a purposive, convenience sample of nurses from regional Queensland. Schneider (2003) asserts that quantitative survey design allows for a wide-ranging study to be conducted with larger participant numbers. While the aim of this study is not to generalise the findings, data collected using survey design has the potential to be summarised and provide comparisons to similar populations (Schneider, 2003). The quantitative approach then provides an examination and description of the observed variables. The method used for the present study is observational rather than experimental, employing a small survey to provide a profile of the population of interest’s demographics, the prevalence of behaviours and provision of health education. Although surveys are considered an efficient means of collecting data, there is the potential that the context may be lost (de Vaus, 2014). Accordingly, this study used questions drawn from large, national surveys which allowed comparisons to be made with data shared by the ABS and large national studies to help provide context and comparability.

3.3.4 Phase Two Design

Qualitative interviews allow for comprehensive, realistic examination of a phenomenon of concern. This study uses an explanatory approach, similar to that described by Creswell,
Shope, Plano Clark and Green (2006). The analysis procedures provide inductive reasoning to discover meanings within the data while ensuring the researcher still recognises individual differences, and honours the participants’ views within the existing contexts (Creswell, Shope, Plano Clark & Green, 2006). In this way, the qualitative method provides a contextual framework for the research question by uncovering a deeper understanding of the topic of interest. The participant sample is smaller than for Phase one of the study and the aim is to use an inductive approach to gain an understanding the experiences of the participants in the study (Schneider & Whitehead, 2013). Phase two of this study is concerned with interpretation of the data collected, understanding that participants’ observations, experiences and their perceptions of these are of importance.

Cresswell and Plano Clark (2011) raised questions related to ensuring adequate integration of the methods used throughout the stages of the study. These included:

- are the same or different participants being used for both phases?
- will the sample sizes be the same for both Phase one and Phase two?
- what results from the quantitative survey will be further explored?
- how will participants for Phase two be selected?

In response to these questions, the subsequent decisions were made for this study. The same sample of participants was targeted for both phases, potential interviewees were invited to contact the researcher at the completion of the survey, and the rationale for this was to further explore results of the survey so the same participants were required. The Phase one sample was much larger than the Phase two sample as it is not necessary to interview over 100 participants. The overall results and responses from the open-ended questions in Phase one were further explored in the interviews during Phase two.
In line with the semi-structured approach to interviewing, five guiding questions, outlined at the end of chapter four, were established for use in the interviews to encourage discussion and help guide the interview.

Acknowledging “hubris” in the qualitative and analysis phase of this study is important, as this meant being mindful of any personal beliefs the researcher may have towards the findings of the study and practising reflexive thinking (Cassidy, 2013). Clancy (2013) argues that reflexivity incorporates methods of questioning our attitudes, responses and habitual actions in order to understand our roles in relation to others. Keso, Lehtimäki and Pietiläinen (2009) describes this process further as enabling researchers to evaluate themselves and develop a responsiveness of where they are coming from with respect to their values, beliefs, and interests. The researcher kept a reflective journal to document all decisions and constantly re-examined the data and findings of the study, while questioning any bias to ensure reflexivity.

3.4 Ethical Considerations

The National Health and Medical Research Council (NHMRC) of Australia define ethics as “the concepts of right and wrong, justice and injustice, virtue and vice, good and bad, and activities to which these concepts apply” (NHMRC, 2007, p. 99). With this in mind, applications were made in line with the above concepts and ethics approval was obtained from the Human Research Ethics committee of CQUniversity prior to the start of the research. For the quantitative stage of the study, potential participants were provided with an information sheet explaining the study in detail and consent was implied if they completed the online survey. The quantitative stage of the project received approval by the Human Ethics Research Review Panel at CQUniversity (PROJECT H14/07-167). The
qualitative stage required a second ethics approval (PROJECT H15/04-054), in which participants were provided with a further information sheet, cursory results of the quantitative survey and informed consent was obtained prior to interviews being conducted. Participants were clearly informed of what was required of them through their voluntary participation, and that they could withdraw at any time, without consequence, up until the commencement of data analysis. The anonymity of survey participants and confidentiality of interviewees were, and will continue to be, meticulously maintained. All interview transcripts were de-identified and given a numbered identifier, RN1 is the first participant.

The research was conducted under ethical guidelines, consistent with the four “pillars” of human research (health services, public health, clinical and biomedical research) and Objective 1: raising the standard of individual and public health throughout Australia (NHMRC, 2011). Quality assurance processes included the regular monitoring on a designated secure web server (password protected Survey Monkey account) during the online data collection period. In this study, the researcher conducted regular assessments of the data collection progress on Survey Monkey, looking for the number of responses, the number of completions, characteristics of any incomplete entries and general data quality. After data collection was complete and analysis had commenced, regular data backups were made and the data was stored on the researcher’s secure web server. This data consists of survey results and interview transcripts.

3.5 Research Setting

The setting for this study was a coastal city in regional Australia, which covers more than 6,000 square kilometres and is situated approximately 400 km from the nearest capital
city. The general population of the region is approximately 92,000 of whom 64% are 45 years or older, giving an older population when compared to 51% for Queensland in general. Over 50% of the population report an income of less than $60,000 per annum, which indicates lower socioeconomic status (ABS, 2015). Given the average salary for a registered nurse in Australia is over $70,000, it can be assumed that RN participants in this study may have a higher average annual income when compared to the average income of the general population of the region where they reside (The State of Queensland (Queensland Health), 2016).

The regional study site has three major hospitals; one public and two private. The public hospital has 174 beds as well as 44-bed alternatives, and nurses are employed in level four intensive care, coronary care, obstetrics, gynaecology, pediatrics, orthopaedic surgery, general surgery, vascular surgery, 24-hour emergency medicine, and comprehensive mental health services. The two private hospitals have 54 and 143 beds respectively, and nurses are employed in the provision of diabetic education, day surgery, operating theatres, pediatrics, palliative care, bariatrics, critical care, coronary care, oncology, gastroenterology, general and surgical inpatient wards, gynaecology, plastic and cosmetic surgery. There are also over a dozen aged care facilities in the region, ranging from low to high care. Nurses are also employed in community care and medical centres. The region has a number of public and private schools, a Technical and Further Education (TAFE) campus, and a university campus that offers undergraduate nursing degrees.
3.5.1 Population, Sample and Recruitment

Participants for both phases were RNs employed within the public or private health sectors within the regional study site. Only RNs as defined by the Australian Health Practitioner Regulation Agency (AHPRA) were included as their education and training is regulated to include health education. Other levels of nurses such as Assistant in Nursing (AIN) and Enrolled Nurses (ENs) were excluded. These inclusion and exclusion criteria are consistent with a purposive sampling protocol, where the individuals are selected based on the purpose of the research and on the basis of the extent they can contribute meaningful information on the topic of interest (Tashakkori & Teddlie, 1998, p. 76).

Following ethics approval, recruitment occurred via social media sites utilising snowball sampling where potential participants were asked to not only participate in the study but to also share the link to invite participation from others who met the eligibility criteria. A link was posted to the researchers’ personal Facebook page (due to a large number of personal contacts who met participation criteria), as well as various local area nurses groups’ Facebook pages with an accompanying link that could also be copied and shared via email or social media. This combination of purposive and snowball sampling has been adopted in an attempt maximise the eventual sample size and to reduce the selection bias intrinsic to non-random sampling (Landorf, 2010, p. 257) from professional bodies or indeed from personal contacts alone. The researcher acknowledges there may be existing relationships with some participants through the researcher’s own training, previous employment or other contacts, however, the data for the survey was anonymous. The information provided to potential participants (Appendix A) contained general information about the study and instructions on how to access the online survey including
a hyperlink to it. At the end of the survey, an invitation to also be interviewed in Phase two was included along with the researcher’s email address. On completion of Phase one analysis, a plain English summary of findings was posted to the same social media sites and included another invitation to participate in the interviews. Potential interviewees who contacted the researcher via email were then sent a further information letter regarding the interview (see Appendix F) and a consent form to complete (see Appendix G). Once the consent form and the participant’s details were received, the researcher contacted the interviewees to arrange a time and venue suitable to both parties.

3.6 Data Collection Instruments
As previously outlined, there were two separate data collection phases for this study. Phase one involved the collection of predominantly quantitative data, followed by Phase two consisting of qualitative data collection. Each of these phases required a separate data collection tool and the processes involved in the tool development are described below.

3.6.1 Phase One Survey Instrument Development
Following a review of the literature and examination of current nursing and population health research, a single tool that would adequately address the issues involved in this research study could not be located. Subsequently, a survey instrument was developed. The research team identified three relevant and validated survey tools: National Health Survey (NHS), the National Nutrition and Physical Activity Survey (NNPAS) and the Queensland Health’s Self Rated Health Survey (SRHS). Each of these are self-reported survey tools have demonstrated validity and reliability and have been used by the both the Australian Bureau of Statistics and Queensland Health to describe the health
determinants of the general population (ABS, 2013b; DOH, 2014). Questions not relevant to the research question were omitted to minimise the survey length to reduce potential burden for the respondent (Schneider, 2003, p. 286) and to improve the likelihood of completion. This was important not only for ethical reasons, but also practical reasons as no funding was available to compensate participants for their time and input.

An initial survey instrument was piloted with seven academic nursing staff, as well as three expert nurse researchers, all of whom did not reside in the study region, and thus were not eligible to participate in the full study. Teddlie and Tashakkori (2009) state that the involvement of experts to assist with this process is a method of validation. In response to feedback, changes in the length of the survey and the sequence of questions were applied before data collection was commenced.

The final survey instrument (See Appendix C) included both closed and open-ended questions and consisted of three components:

1. A standardised introduction and two criteria;

2. Standard demographic questions;

3. Questions relating to participants’ training, health behaviours and other risk factors, and beliefs about the role of nurses regarding health education.

These measures are detailed below.

3.6.1.1 Measures

Following the standardised introduction, confirmation was required from respondents that they met the two qualifying criteria to participate in the survey: that they were an
RN and that they resided in the regional study site. A positive response to this question directed the participant into the survey, while a negative response screened them out.

**Demographics.** Participants were asked standard demographic questions of age at last birthday, gender, and employment status. Employment status responses included full-time, part-time, unemployed and seeking employment, unemployed and not seeking employment, retired, and unable to work (disabled). An additional question asked how many years of experience in nursing they had, with responses entered as whole years.

3.6.1.2 **Health Risk Behaviours and BMI**

**Physical Activity**

Participants were asked eight questions derived from the SRHS to determine their physical activity levels based on the physical activity or exercise they undertook in the last week. Data on physical activity was collected to determine whether the participants met the guidelines according to the National Physical Activity Guidelines (NPAG) for Australian Adults (DOH, 2015) and to allow comparison with the Australian Health Survey (AHS) and NHS data and other studies. Questions were asked relating to walking for fitness, recreation or sport, and travel, and whether this was for at least 10 minutes. Further questions were asked about time spent engaging in vigorous physical activity or exercise and moderate physical activity or exercise. Participants were asked how many days they had exercised, and, of those days, how many they exercised for at least 30 minutes. These questions were asked in order to measure participant’s activity against national guidelines promoted in physical activity campaigns (Commonwealth of Australia, 2014) that recommended 30 minutes of physical activity on five days of the week and to ensure comparability with other studies that utilise the standard adopted by the WHO standard
(2012). This standard recommends at least 30 minutes of moderate-intensity physical activity on most, and preferably all, days for adults (18 years and older). Both the current NPGA (DOH 2015) and the American Heart Association (AHA) also recommend this as the minimum level of exercise for overall cardiovascular health (AHA, 2014). These thresholds are based on evidence from previous studies that have found these levels of activity are associated with beneficial health-related outcomes across a wide range of populations (Almeida et al., 2014; Mammen & Faulkner, 2013; Paluch & Blair, 2011; Armstrong, Bauman & Davies, 2000; Haskell et al., 2007; Hildebrandt et al., 2010).

**Smoking**

Participants were asked eight questions derived from the NHS about their smoking behaviour. They were asked if they currently smoke, and those who responded “yes” were then asked questions about how regularly they smoked. Those participants who identified as regular, daily smokers were classified as smokers. Respondents who reported that they were not current smokers were then asked questions to determine if they had ever smoked regularly. This was defined as having smoked at least 100 cigarettes in their life or having smoked other tobacco products at least 20 times in their life (ABS, 2013b). If respondents answered “yes” to these questions, but were not current smokers, they were classified as ex-smokers. Those who identified as not currently smoking, and had not answered “yes” to previous experiences of smoking were classified as having never smoked. These measures were consistent with those used in both the AHS and NHS.
Dietary Practices

Participants were asked four questions that originated from the NHS to measure the number of serves of vegetables and fruit they usually ate each day to determine if their consumption met the recommended NHMRC’s Australian Dietary Guidelines (2013). These guidelines recommend that adults 18 years and over should consume five servings of vegetables and two servings of fruit daily. For the purposes of this survey, the definitions outlined in Table 3.1 regarding vegetable and fruit consumption were provided to participants as outlined in the NHMRC’s Australian Dietary Guidelines (2013).

Table 3.1. Vegetable and Fruit serving sizes

<table>
<thead>
<tr>
<th>Vegetable and Fruit serving sizes</th>
<th>A serve of vegetables was defined as either:</th>
<th>A serve of fruit was defined as either:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>half a cup of cooked vegetables or</td>
<td>one medium piece or</td>
</tr>
<tr>
<td></td>
<td>one medium potato or</td>
<td>two small pieces of fruit or</td>
</tr>
<tr>
<td></td>
<td>one cup of salad vegetables</td>
<td>one cup of diced fruit.</td>
</tr>
</tbody>
</table>

Pictures of serving sizes were included in the survey as previous research has found that consumers are often unfamiliar with standard portion sizes and this can contribute to errors associated with self-reported intake which can impact on the consistency of data (Faulkner et al., 2012; Higgins et al., 2009; Ashfield-Watt, 2006; Pollard, Daly & Binns, 2008). See Appendix C for pictures of vegetable and fruit serving sizes included in the survey. Once familiar with serving sizes, participants could more accurately report their
intake (Kristal et al., 2014). Participants were also asked whether their vegetable and fruit consumption had increased, decreased or stayed the same over the last year.

**Alcohol Consumption**

Participants were asked seven questions regarding their alcohol consumption. The questions were adapted from the Queensland Health’s SRHS (2014) and the NHS based on the 2009 Australian NHMRC Guidelines 1 and 2 for adults. The Australian Guidelines for Adults’ state: “Guideline 1—drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury” (NHMRC, 2009). The guidelines also recommend that to reduce the risk of alcohol-related injury on a single occasion of drinking, adults should drink “no more than four standard drinks on a single occasion” (Guideline 2, NHMRC, 2009). The risk to health from alcohol consumption combines risk associated with both disease and injury. Pictures of what constitutes a standard drink in various alcoholic beverages were included in the survey to assist in answering these questions accurately (Devos-Comby & Lange, 2008; Greenfield & Kerr, 2008; Welsh et al., 2014). See Appendix C for images used in the survey of standard drinks.

Initially, participants were asked if they had consumed an alcoholic drink of any kind in the last 12 months. If they answered “no” they were directed to the next section of the survey. Those who reported they had consumed alcohol in the last 12 months were asked to indicate how often on a scale from every day to no longer drink.

Respondents were also asked to give the number of times they had consumed 11 standard alcoholic drinks or more, seven or more, five or more, and three or more in a day within the last 12 months. The number of standard drinks per day was then used to determine
their compliance with the NHMRC guidelines, specifically Guidelines 1 and 2. Finally, respondents were asked whether their consumption of alcohol had increased, decreased or stayed the same over the last year.

**Self-rated Health and Weight**

Self-rated health is a commonly used health outcome measure and has been found to be valid and reliable in a wide range of populations (Benitez-Silva & Ni, 2008; Gunasekara, Carter & Blakely, 2012; Singh-Manoux et al., 2007). Consistent with the NHS survey the self-assessed health status was measured using a standard 5-point Likert scale with ranges from poor (1) to excellent (5). Self-rated weight was assessed on a 3-point Likert scale consistent with the NHS: underweight; healthy weight; overweight. A fourth option was available to indicate if a participant was pregnant.

**BMI**

Participants were asked their height (in centimetres) and weight (in kilograms), this was then used to calculate their Body Mass Index (BMI).

**3.6.1.3 Health Education Beliefs and Practices**

Participants were asked eight separate questions about their own health, education beliefs and practices. The questions were developed by the researcher based on common barriers identified in the literature review to help inform the interview questions for Phase two. The first five questions examined the provision of health education by RNs. Two questions then elicited beliefs on barriers to RNs maintaining healthy behaviours. The last question investigated their beliefs as to the link between health risk behaviours and the provision of health education. These are detailed below.
**Provision of Health Education**

The first question examined participants’ beliefs on the role of RNs in health education. Participants were asked to rate how important they believe the role of the RN is in health education using a 5-point Likert scale with potential responses ranging from extremely important (1) to not important (5). The next question contained multiple responses regarding which topics they gave regular advice to their patients on including: reducing or quitting smoking; drinking alcohol in moderation; reaching a healthy weight; increasing physical activity; eating healthy food or improving diet; or none of the above. This question was included to allow comparison with their own behaviours.

**Barriers to Providing Health Education**

Participants were then asked an open-ended question: “Thinking about your practice; what do you perceive are the barriers to delivering health education to the people you care for?” Following this, participants were then asked to rate on a Likert scale, the two barriers to delivering health education on a regular basis that the researcher had found commonly cited in the literature and these were the lack of time and knowledge.

The next two questions focused on what barriers they believe RNs face in adopting and maintaining healthy lifestyles and any strategies they could suggest for overcoming these barriers. SCT proposes that cognitive, behavioural, personal and environmental factors interact to determine an individual’s motivation and behaviours (Crothers, Hughes, & Morine, 2008). Self-efficacy relates to how participants perceive barriers to adhering to the health risk behaviours and delivering health education and how motivated they are
to overcome these perceived barriers. The strategies outlined may shed light on the perceived capability to achieve their health goals and perform education.

**Impact of behaviour on provision of health education**

Participants were asked to choose ‘yes’ or ‘no’ to the question, ‘Thinking about this description of healthy behaviours, do you believe that nurses who engage in unhealthy behaviours are less likely to provide health education to their patients?’ They were then asked to explain their answer in an open-ended question. The decision to include open-ended questions to the survey was to gain insights into responses made in the participants’ own words and to entice broader responses relating to the perceived barriers and allow participants to suggest strategies. This also allowed respondents to introduce their own meanings and topics that may not have been covered by the closed questions (Schneider & Whitehead, 2013; Teddie & Tashakkori, 2009).

**3.6.2 Phase Two Interview Schedule Development**

The interviews were conducted using a semi-structured style and five predetermined guiding questions developed in accordance with the findings from Phase one. The Phase one identified a number of issues that warranted further explanation; these included the value placed on health education, personal beliefs, and perceived patient perceptions around nurse credibility and patient readiness to accept education. DiCicco-Bloom and Crabtree (2006) outline a structure for undertaking semi-structured interviews. This includes a number of predetermined, open-ended questions, which are used to guide and initiate conversation focused on a particular subject matter (See Appendix H). The participants were encouraged to speak freely and prompted to explain further where
necessary. A more detailed discussion of the interview procedure is provided in Section 3.7.2.

3.7 Data Collection

The methods of data collection for both phases of the research study are explained in the following sections.

3.7.1 Phase One Data Collection

Data for the first phase was collected via an online survey, hosted on Survey Monkey. The online survey displayed an explanatory letter on the front page (See Appendix B) outlining the research project and providing contact details of the researcher. The page also reminded participants of the inclusion criteria, that is RNs who lived in the study region. The survey opened on the 12th August 2014.

The survey was posted to social media accounts; that being the researchers’ personal Facebook page and the local nurses facebook group via hyperlink, asking registered nurses to share on their own pages and also a URL to share via email with those that did not have access to Facebook. To reduce the effects of selection bias within the limits of the study, the survey was anonymous, and nurses were asked to share as broadly as possible with colleagues. A reminder notice was posted via the same social media accounts; on the 21st of August 2014 for those who had not seen the previous post or had not yet completed the survey. This strategy elicited a further 25 responses. The online survey was closed on 4th September 2014 with a total of 123 responses. Of these, 21 respondents only partially completed the survey and were therefore removed from the dataset.
3.7.2 Phase Two Data Collection

Phase two of the study consisted of the collection of the qualitative data through semi-structured interviews. The purpose of the research interview was to explore the views, experiences, beliefs and motivations of participants on particular matters related to the research topic. Semi-structured interviews are the most common type of interviews used in qualitative research (Holloway & Wheeler, 2013), whereby the researcher utilises three to five predetermined open-ended questions (Doody & Noonan, 2013). The wording of the questions can be flexible and issues can be explored spontaneously as they arise (Berg, 2009; Power et al., 2010). This format is favoured in healthcare, as it provides participants with some direction on what to talk about, which many find helpful (Gill, Stewart, Treasure & Chadwick, 2008).

Participants were contacted using the details they had provided via email in response to the invitation at the end of the survey and on the plain English summary of the quantitative results. The interviews were intended to be approximately 30–60 minutes in length. Interviews were conducted with the eight participants who had identified their details at the end of the survey. The discussion was guided by the interview predetermined questions, however, participants were encouraged to speak freely and elaborate on issues they felt important. Interviews were undertaken over a two-week period, at a time and place convenient for both the researcher and participant. Three interviews were conducted via telephone as requested by the participants. All interviews were audio-recorded by the researcher with the consent of the participants and transcribed verbatim. Questions explored included perceived barriers and facilitators to the provision of healthy education. To assist in the clarification of participants’ thoughts
and responses the researcher would sometimes reiterate what was said or ask for further clarification.

3.8 Analysis

For consistency with the sequential explanatory mixed methods design, Creswell and Plano-Clarke (2011) describe a three-phase process of analysis. Analysis of Phase one of the study occurs once the survey data has been collected. The results of this then inform the collection of the qualitative data in Phase two. Analysis of Phase two is performed upon completion of the interviews. The third phase of analysis takes place at the integrative explanatory stage. The methods of data analysis will now be discussed for this study.

3.9 Phase One Data Analysis

Analysis of the Phase one quantitative data was facilitated by the use of two software packages: Microsoft Excel and SPSS (Statistical Package for the Social Sciences). The data was checked and cleaned in Microsoft Excel before being uploaded to SPSS v22 (IBM Corporation, 2013) for statistical analysis. The data was cleaned using the data cleaning protocol suggested by Van den Broeck, Cunningham, Eeckels, and Herbst (2005). Data tables were generated in Survey Monkey and then imported into Microsoft Excel where spelling was checked and corrected, errors in responses such as the addition of kilograms or centimetres in the height and weight rather than just numeric responses were amended, checks were performed on records to ensure that specific values lay within valid ranges and relationships between items were within limits deemed acceptable for the purposes of the survey. Frequency statistics were run to ensure data was coded correctly before analysis commenced. Statistical outliers (that is any observations that
were an abnormal distance from other values in the sample) were identified and checked.

Following the identification of errors, responses with more than half of all values missing were deleted (Van den Broeck et al., 2005). Exclusion of 21 respondents with insufficiently detailed and 1 with inconsistent data left a final data set containing 101 cases with a total of 57 variables for each case. The data was then imported from Microsoft Excel into SPSS version 22. Descriptive statistics were generated and checked for each variable.

3.9.1 Created Variables

Additional variables were created from the initial data to allow comparison with participants’ reported behaviours and the guidelines in relation to health behaviours of interest. These included the calculation of BMI, grouped BMI status, behaviour categorisations and compliance with behavioural guidelines.

Body mass index

Participants’ BMI was calculated using participants’ self-reported weight in kilograms and height in centimetres; three cases were removed from this variable as two participants were pregnant and another indicated a BMI of 12 suggesting one or both of the supplied measures was incorrect. A variable was then created (BMIGrouped) to group the participants into underweight, healthy weight, overweight or obese categories consistent with the national guidelines as per the table below (ABS, 2016).
Table 2.2 Body Mass index categories and ranges

<table>
<thead>
<tr>
<th>Category</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Less than 18.50</td>
</tr>
<tr>
<td>Healthy weight</td>
<td>18.50 – 24.99</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.00 – 29.99</td>
</tr>
<tr>
<td>Obese</td>
<td>30.00 or more</td>
</tr>
</tbody>
</table>

**Alcohol consumption guidelines**

To measure compliance with recommended alcohol consumption guidelines, two variables were created. The first, Alcohol2, identified whether participants did or did not meet the risk of no more than four standard drinks in any single occurrence (Guideline 2). The second, Alcohol1, was created to identify those who did or did not meet the lifetime risk guidelines (Guideline 1) of no more than two standard drinks a day. These were then combined to create a variable of whether participants met both the recommended guidelines of no more than two standard drinks a day and no more than four in any single occurrence.

**Physical activity**

A composite variable was created for physical activity (TotalEx). Vigorous activity minutes were multiplied by two and added to all other types of exercise minutes as per the guidelines outlined in Table 3.3 to be consistent with the data collected in the NHS.
Table 3.3. Physical activity calculations based on NHS

<table>
<thead>
<tr>
<th>Data item</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether (exercise/physical activity) last week met 150 minutes recommended guidelines</td>
<td>Walking + Moderate + Vigorous time.</td>
</tr>
<tr>
<td>Whether (exercise/physical activity) last week met 150 minutes and 5 sessions recommended guidelines</td>
<td>Walking + Moderate + Vigorous time and session.</td>
</tr>
</tbody>
</table>
| Whether participated in sufficient activity in last week (duration only) | Walking + Moderate + Vigorous time. Vigorous time was multiplied by two. Output categories:  
+ Sufficiently active for health = 150 minutes or more.  
+ Insufficiently active = 1-149 minutes.  
+ Inactive = 0 minutes. |
| Whether participated in sufficient activity in last week (duration and session) | Walking + Moderate + Vigorous time. Vigorous time is multiplied by two. Number of sessions for Walking + Moderate + Vigorous  
Output categories:  
+ Sufficiently active for health = 150 minutes or more and at least 5 sessions  
+ Insufficiently active = 1-149 minutes or 150 minutes or more but less than 5 sessions  
+ Inactive = 0 minutes  
(DOH, 2015) |

**Dietary behaviours**

Variables were created to identify whether participants met the guidelines for fruit intake of two or more servings per day (fruitguide), vegetable intake of five servings per day
(vegguide) and a further composite indicator of whether a participant met the dietary guidelines (dietguide) of both fruit and vegetable intake or not.

Multiple Risk Factors

An additional variable (multipleriskfactors) was created to identify how many of the six identified risk factors of smoking, alcohol, fruit, vegetable, physical activity, and obesity were prevalent in each participant. This variable is consistent with the current concerns over the prevalence and health impact of multiple lifestyle risk factors (AIHW, 2012; Chiuve, McCullough, Sacks, & Rimm, 2006; Tuckett & Henwood, 2014).

3.9.1.1 Data Analysis

As a small, exploratory part of the study, the quantitative analysis of the data was restricted to descriptive and summary statistics which are sufficient to identify potential patterns of relationships between health behaviours and the provision of health education. This then informed the deeper examination being conducted in the qualitative phase.

Descriptive statistics were run to examine all variables, including measures of central tendency, and to identify any problems with the data. Summary statistics using contingency tables were then run to examine the relationship between health behaviours and participant’s beliefs and provision of health education.

The coding process for the data collected from responses to the open-ended questions was undertaken using the software package, NVivo 10. The open-ended question data from the individual responses were analysed using both content and thematic analyses identifying key words, frequencies and themes. Content analysis was used to code the
responses to the first three open-ended questions as the responses were only short (de Chernatony & Riley, 1999; Tax, Brown, & Chandrashekaran, 1998). To code the data, an inductive categorisation method in which recurring factors found in the responses are identified (Spiggle, 1994, Strauss & Corbin, 1990). The NVivo 10 program was used to facilitate the process of coding and determining frequencies of responses with similar meaning. A number of text term queries were run within the NVivo program looking for recognition of text. The final open-ended question was analysed using thematic analysis as participants had responded in short paragraphs allowing emergent themes to evolve from the data. The findings from the analysis of the questionnaire items, both closed and open responses, informed the development of the interview questions used in Phase two of the study.

3.10 Phase Two Data Analysis

Consistent with the sequential explanatory mixed methods design, the Phase two data analysis added to the results gained in Phase one of the study. Thematic analysis was undertaken to explore more deeply the issues and themes from Phase one and provide development. Thematic analysis has been described by Rowley (2010) as a method by which significant themes emerging from the data are discovered and linked to form a comprehensive and coherent narrative. The series of steps used for the thematic analysis of data in this study include verbatim transcription, content checks, preliminary coding into nodes, development of sub-themes, and finally mapping of emergent themes to the current research question (Saldaña, 2012).

Audio files were given a numerical code to maintain confidentiality of the participants. The files were sent to a professional transcribing service and transcribed verbatim. The
word files were returned via a coded email to the researcher and checked for accuracy of content by the researcher. To ensure familiarity with the content and also address the concern raised by Bailey (2008) that the connotations of words are influenced by how they were expressed, the researcher listened to the participants’ audio files while reading through the word documents, adding notes where necessary. The first few interview transcripts were also read by the researchers’ supervisor to ensure consistency of interview technique and adequate quality of data.

The word documents were then imported into NVivo 10, and coding commenced. The process of “open coding” was used initially in which segments of meaning (nodes) from the transcripts were highlighted and labelled in relation to the research topic (Neuman, 2014). This was followed by axial coding to review and examine the initial codes and categorise these into subthemes which after the next step of selective coding generated the main themes (Neuman, 2014). The NVIVO file was shared with the researchers’ supervisor, independent coding initially allowed comparison of categories and the absence of confirmation bias. Once the supervisor was content with the process and flow of categories, the themes were developed and again discussed until both came to agreement. This process allowed the researcher to determine content in the data that differed from the themes identified in the analysis of Phase one, which was used to develop the guiding questions for the interviews, thus enhancing the analytical process. Utilising NVivo 10 to assist with the qualitative analysis phase, Leech and Onwueguzie (2011) assert that this can also enhance the rigour of the study. A comprehensive discussion of the findings from the Phase two data analysis is provided in Chapter five.
3.11 Data Quality

Quality and validity of data are important in research. Cresswell and Plano Clark (2011) assert that even though validity varies between qualitative and quantitative data, the provision of quality data, findings and interpretations is a shared goal. The strategies employed in this study to guarantee valid, reliable data were collected, analysed and recounted, are provided below.

3.11.1 Phase One Quantitative Data Quality

Various strategies were employed to improve the reliability and validity of the Phase one quantitative data collection and analysis. As Phase one consisted of an exploratory survey within a small geographic region, reporting descriptive statistics, the sample size did not need to be large. While greater samples are likely to provide a more accurate representation of the population (Beanland et al., 1999) a smaller sample size is normal in an exploratory survey (Denscombe, 2014). The response rate is discussed in Section 4.2. The quantitative data was supplemented by qualitative data in Phase two of the study.

Random or stratified sampling was not possible to ensure representativeness so purposive sampling and the use of measures to compare to population level statistics for context was undertaken. The sample was purposively selected using a snowball technique to ensure participants met the inclusion criteria.

3.11.2 Qualitative Data Quality

To ensure rigour in this study, processes were undertaken which aim to enhance data quality and guarantee that the data gathered and reported on, stays accurate to the participants’ meaning and context. Creswell and Plano Clark (2011) ascertain that this will promote credibility, transferability and confirm-ability and that the decisions drawn by
the researcher will be transparent to the reader. The following quality control measures were undertaken by the researcher to ensure data was collected, maintained and reported in the correct manner.

Purposive sampling was conducted from interested respondents; interviewees self-selected and worked in a variety of areas and facilities, and this allowed varying experiences from multiple perspectives to emerge. During the Phase two, providing a numerical code for each of the participants ensured data analysis confidentiality as outlined by Holloway and Wheeler (2013). A professional transcription company transcribed the interview audio files verbatim to ensure accuracy. The researcher listened to the interviews multiple times while reading the transcripts to ensure accuracy and context, as recommended by Markle, West and Rich (2011). Throughout the data collection and analysis stages, further enhancing trustworthiness, the researcher also maintained a “decision-trail” where all decisions are clear and transparent and documented in a journal (Noble & Smith, 2015). These decisions were also checked with the researcher’s supervisor to ensure consistency in decisions, which is important for novice researchers (Holloway & Wheeler, 2013). This gives other researchers the ability to understand the decisions made and to enable comparable findings to be found. Examples of participants’ explanations were also included to support the findings. The findings from this study, given the range of perspectives and work contexts, should be applicable to other settings or groups within Australia.

3.12 Conclusion

This chapter outlined the research design and methodology used to gather and analyse both the quantitative and qualitative data in this study. A sequential explanatory mixed
methods methodology was chosen as the most suitable design for this study and this chapter has detailed how the mixed methods study was conducted. It also discussed the methods utilised, population, sample and recruitment for both Phase one and Phase two, and it also covered the data collection techniques and the data analysis processes. Phase one results from the study are presented in Chapter four, while Phase two findings are discussed in Chapter five.
4.1 Introduction

The results of this study are conveyed in two separate chapters. In observance of the sequential explanatory research design defined in Chapter three, Phase one results are reported first, with Phase two findings being presented in Chapter five. The aim of this chapter (Chapter four) is to describe the findings of the examination of the data gathered from the survey. The response rate and respondents’ demographic data are reported first. The results of the quantitative data analysis for Phase one of the study are then described. The findings of descriptive analytic techniques are reported, using graphs and tables where appropriate. Finally, a description is given of the open-ended question responses utilising content and thematic analysis.

4.2 Phase One Quantitative Response Rate

There was no systematic administrative data available that indicates the number of RNs in the study region available either through ABS or AHPRA. Instead, to determine an estimate of the population of RNs currently employed in the region, the major employers were contacted in July 2014 via telephone and email. From the figures reported by the major employers, an estimate of 808 RNs was calculated. Employers contacted included the base hospital, the two private hospitals, nursing homes, and community nursing organisations. Given some RNs may also be employed in the larger primary health care organisations, schools and other non-health services, this is considered a slight undercount, although the best estimate possible with the resources available to the project.
The sample for the survey included 123 responses of whom 102 completed the survey in its entirety. Therefore, the overall response rate for the Phase one survey is estimated to be approximately 15% of the area’s RN population.

4.3 Phase One Demographic Data

The age distribution of the sample, illustrated in Figure 4.1, is mostly consistent with the RN population of Australia. An exact comparison with national figures of RNs was not possible due to the differences in how ages were grouped between surveys. However, the ABS (2013) reported the majority of nurses fell in the 35–54 year age groups, which is consistent with the present study. Participants in the present study had an average age of 47 years, which is close to the average age reported by AIHW for RNs in Australia of 43.3 years (AIHW, 2013).

![Figure 4.1. Proportion of participants by age category](image)

The distribution of gender in this sample was 90% females and 10% males. This is also consistent with the Australian general nursing population. In 2011, 90% of all Australian nurses were women (ABS, 2014). The majority of participants in the present study
reported being married (68%), 14% reported were divorced or separated, 11% in a de-facto relationship, and 7% single or widowed.

### 4.4 Professional Characteristics

#### 4.4.1 Employment Status

All participants were current RNs. The majority of participants reported working part-time (51%), while 46% reported working full-time, and three percent identified as being unemployed. These figures are also consistent with the Australian RN population with 51% employed part-time in 2011 (ABS, 2014).

#### 4.4.2 Years of Experience

The average years of experience was 17.16 years, with a standard deviation of 12.435 (n=100). The mean is consistent with national figures, reported as 17.3 years (HWA, 2013).

![Bar chart showing the distribution of years of experience as a registered nurse. The chart includes the mean (17.16 years) and standard deviation (12.435) and is labeled Figure 4.2. Years of Experience as a Registered Nurse.](chart.png)
4.4.3. Education and Training

All participants in this study were required to be RNs to ensure a baseline education status in relation to the level of knowledge they should have of health risk factors and the importance of the provision of health education. The following results report on the percentage of RNs that have received extra training on each health risk factor, the number of respondents who had received training in multiple factors and the highest level of training received. The additional training was broken into different levels including short course, workshop, graduate certificate, graduate diploma, masters and PHD.

The low prevalence of additional training was consistent across each of the subject areas of interest, as shown in Table 4.3. Participants indicated they had undertaken further training in one or more of the health risk factors of smoking cessation, weight management, healthy eating, alcohol issues, or physical activity since registration. Table 4.3 reports the percentage of participants who have had extra training in each of the healthy behaviours.

Table 4.1. Participants who have had extra training in healthy behaviours

<table>
<thead>
<tr>
<th>Extra training topic</th>
<th>% of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation</td>
<td>8</td>
</tr>
<tr>
<td>Weight management</td>
<td>7</td>
</tr>
<tr>
<td>Healthy eating</td>
<td>9</td>
</tr>
<tr>
<td>Alcohol issues</td>
<td>7</td>
</tr>
<tr>
<td>Physical activity</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 2.2. Number of areas in which extra training was received

<table>
<thead>
<tr>
<th>Number of areas in which training was received</th>
<th>% of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional training</td>
<td>83</td>
</tr>
<tr>
<td>1 area</td>
<td>6</td>
</tr>
<tr>
<td>2 areas</td>
<td>3</td>
</tr>
<tr>
<td>3 areas</td>
<td>6</td>
</tr>
<tr>
<td>4 areas</td>
<td>0</td>
</tr>
<tr>
<td>5 areas</td>
<td>2</td>
</tr>
</tbody>
</table>

Of those who had undertaken additional training, most were undertaken at short course (43.75%) or workshop level (31.5%). Only 6.25% had studied them at Graduate Certificate level, and no participants had studied them at Master’s Degree or higher level.

4.5 Health Outcomes

4.5.1 Self-rated Health

More participants rated their health as being good (42%), than very good (30%) or excellent (9%) as illustrated in Figure 4.3. This is lower than the Australian general population figures of 56.2% for both very good, and excellent. Only 14.8% of respondents rated their health as fair or poor (ABS, 2015).
Figure 4.3. Self-rated health. This figure illustrates participants’ self-rated health status from poor to excellent

4.5.1.1 Self-reported Weight

From self-rated weight status, 57.8% of participants identified as being overweight, 39.2% as healthy weight, and 2.9% as underweight or currently pregnant. Just under half the participants reported a change in their weight over the last 12 months; 22.7% had increased, 25.7 had decreased and 51.5% had stayed the same.

Using a calculated rather than self-reported BMI, more than two-thirds of the participants (70.21%) were actually overweight or obese; comprising of 30.85% overweight and 39.36% obese. A further 29.79% were a healthy weight and none were underweight. A comparison of self-rated weight status and BMI grouping, shown in Table 4.2, shows some respondents are underestimating their weight status. The sample had a higher prevalence of overweight and obesity than the general population of both Queensland and Australia, as shown in Table 4.2 (ABS, 2015; DOH, 2013b). It is important to highlight that this is not a representative sample so this finding cannot be generalised to the population of interest (all RNs in the study region).
Table 4.3. Comparison of participants’ weight categories (% prevalence)

<table>
<thead>
<tr>
<th>Weight status</th>
<th>Self-Rated (%)</th>
<th>Calculated BMI(%)</th>
<th>Australian general population (%)</th>
<th>Queensland general population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight * for BMI includes Overweight and Obese</td>
<td>57.84</td>
<td>70.21</td>
<td>63.4</td>
<td>66.9</td>
</tr>
<tr>
<td>Healthy weight</td>
<td>39.22</td>
<td>29.79</td>
<td>35.0</td>
<td>30.2</td>
</tr>
<tr>
<td>Underweight</td>
<td>0.98</td>
<td>-</td>
<td>1.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td>1.96</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

4.5.2 Health Behaviours

4.5.2.1 Smoking

Only 5.2% of participants identified as a current smoker. Of these, 4.21% identified as daily smokers, and 1.05% identified as a current smoker, but less often than daily. This is less than the Australian nursing, Queensland and Australian general population prevalence rates (ABS, 2013; DOH, 2013b). The prevalence rates of participants who identified as ex-smokers was higher than the general population, and the rate of those who had never smoked lower (ABS, 2013; DOH, 2013b). Table 4.3 shows the comparison of participants’ smoking status with those of Australian nurses, the Queensland population and the Australian general population (ABS, 2015).
Table 4.4. Comparison of participants’ smoking status vs. Australian nurses and the Qld and Australian general population. Sources: NHS, 2014–15

<table>
<thead>
<tr>
<th>Smoking Status</th>
<th>Participants (%)</th>
<th>Aust. Nurses (%)</th>
<th>Qld. Pop. (%)</th>
<th>Aust. Pop. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily smoker</td>
<td>4.21</td>
<td>14</td>
<td>19</td>
<td>14.4</td>
</tr>
<tr>
<td>Less than daily</td>
<td>1.05</td>
<td>n/a</td>
<td>2.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>55.6</td>
<td>n/a</td>
<td>33.1</td>
<td>31</td>
</tr>
<tr>
<td>Never smoked</td>
<td>44.9</td>
<td>n/a</td>
<td>45.8</td>
<td>51.1</td>
</tr>
</tbody>
</table>

4.5.2.2 Alcohol Consumption

Nearly all participants in this study (93.62%) reported having consumed alcohol in the last 12 months. Of these, the majority (56.82%) drank less than weekly, 17.05% drank one to two days a week, 12.5% three to four days a week, 7.95% five to six days a week and 4.55% reporting that they drank every day. On the occasions that they did drink alcohol in the last 12 months, 69.3% reported drinking more than two standard drinks on a single occasion, and 39.7% reported drinking more than four standard drinks on a single occasion. The Australian guidelines for adults’ state: “Guideline 1 - drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury” (NHMRC, 2009). The guidelines also recommend that to reduce the risk of injury on a single occasion of drinking, adults should drink “no more than four standard drinks on a single occasion” (Guideline 2, NHMRC, 2009). The risk to health from alcohol consumption combines risk associated with both disease and injury. Summary statistics identified that the 55–64 year age group (N=16) had the highest proportion of participants who met Guideline 1 (56.3%). The majority of participants (70%) of the total sample had experienced no change to their alcohol intake over the last 12 months, 8.89% said it had
increased, and 21.11% said it had decreased. Table 4.5 shows the breakdown of participants that met each guideline according to age groups.

Table 4.5. Percentage of participants that met alcohol guidelines

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Guideline 1</th>
<th>Guideline 2</th>
<th>Both Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>60.0</td>
<td>60.0</td>
<td>20.0</td>
</tr>
<tr>
<td>25-34</td>
<td>50.0</td>
<td>56.3</td>
<td>43.8</td>
</tr>
<tr>
<td>35-44</td>
<td>36.7</td>
<td>50.0</td>
<td>30.0</td>
</tr>
<tr>
<td>45-54</td>
<td>40.6</td>
<td>65.6</td>
<td>37.5</td>
</tr>
<tr>
<td>55-64</td>
<td>56.3</td>
<td>87.5</td>
<td>56.3</td>
</tr>
<tr>
<td>65-74</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.5.2.3 Healthy Eating

Nearly one-fifth (18%) of participants were found to be meeting the recommended intake of five servings of vegetables per day. This is higher than the general population with only 7% of the Australian general population and 11.9% of Queenslanders meeting the guidelines for daily vegetable intake (ABS, 2015; DOH, 2013b). In addition, 61.7% of participants were meeting the recommended daily intake of fruit. By comparison, in 2014–2015, 49.8 % of adult Australians and 51.6% of Queenslanders reported that they usually met the guideline for daily fruit intake (ABS, 2015; DOH, 2013b).

Overall, when compared to the national guidelines, 13% of participants met both the recommended guidelines of five serves of vegetables and two serves of fruit a day. This rate is higher than the general population with only 5.1% of Australian adults (ABS, 2015),
and 9% of Queenslanders (DOH, 2013b) reported as having an adequate daily intake of fruit and vegetables. Summary statistics, identified that the age group that met the dietary guidelines the most were between 18 and 24 years old (20%). (See Table 4.6). Those who worked part-time (15.7%) had the highest rate of adherence to the dietary guidelines.

Table 4.6. Percentage of participants that met dietary guidelines according to age groups

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Two serves of fruit per day</th>
<th>Five serves of vegetables per day</th>
<th>Both Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>60.0</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>25-34</td>
<td>56.3</td>
<td>25.0</td>
<td>18.8</td>
</tr>
<tr>
<td>35-44</td>
<td>50.0</td>
<td>10.0</td>
<td>6.7</td>
</tr>
<tr>
<td>45-54</td>
<td>56.3</td>
<td>15.6</td>
<td>12.5</td>
</tr>
<tr>
<td>55-64</td>
<td>68.8</td>
<td>25.0</td>
<td>18.8</td>
</tr>
<tr>
<td>65-74</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The majority of participants (74%) reported there had been no change to their vegetable intake in the last year, 15% of participants reported an increase and 11% reported it had decreased. In terms of fruit intake, 11% said their fruit intake had increased in the last year, 11% had said it decreased and 70% had remained the same.

4.5.2.4 Physical Activity

Just under a quarter of participants (24.2%) could be categorised as sufficiently active, based on the national guideline (DOH, 2015). Overall, participants reported higher levels of inactivity and insufficient activity. A comparison of participants’ physical activity and
that of the Australian general population-based on the recommended national guidelines (ABS, 2013) are outlined in Table 4.7.

Table 4.7. Comparison of participants’ physical activity vs. the Australian population

<table>
<thead>
<tr>
<th></th>
<th>% of Participants</th>
<th>% of Australian general population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficiently Active:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 mins or more and 5 sessions per week</td>
<td>24.2</td>
<td>55.5</td>
</tr>
<tr>
<td>Insufficiently Active:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;150 mins or fewer than 5 sessions per week</td>
<td>59.6</td>
<td>29.7</td>
</tr>
<tr>
<td>Inactive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 mins</td>
<td>16.2</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Source: AHS: Physical Activity (ABS, 2015)

The age group that had the highest proportion that met all the guidelines were 45–54 years old (18.8%).

4.5.2.5 Behaviours as Lifestyle Risk factors

From a chronic disease perspective, as the numbers of risk factors increase, so does the likelihood of developing health problems (Yusuf et al., 1998). The behavioural risk factors examined above are included in Table 4.8, as well as the calculated variable of BMI used to determine obesity.
Table 4.8. Risk factors used in the analysis for this section

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Guideline descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Current daily smoking</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>Insufficient time and sessions</td>
</tr>
<tr>
<td>Low fruit consumption</td>
<td>Less than 2 serves</td>
</tr>
<tr>
<td>Low vegetable consumption</td>
<td>Less than 5 serves</td>
</tr>
<tr>
<td>Risky alcohol consumption</td>
<td>Over 2 standard drinks in any one day</td>
</tr>
<tr>
<td>Obesity</td>
<td>BMI of 30 or more</td>
</tr>
</tbody>
</table>

Figure 4.4. Percentage of participants with multiple risk factors

As shown in Figure 4.4, nearly all participants (98%) had at least one of the six risk factors of interest, with the majority having between two and four (85%).

Differences in the number of risk factors by age group are shown in Table 4.9 below. Multiple risk factors are evident from the youngest age group, with 60% of the 18–24 year olds in the sample having three risk factors.
Table 4.9. Percentage of multiple risk factors compared to age groups

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>0.0</td>
<td>0.0</td>
<td>20.0</td>
<td>60.0</td>
<td>20.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>25-34</td>
<td>0.0</td>
<td>6.3</td>
<td>37.5</td>
<td>25.0</td>
<td>25.0</td>
<td>0.0</td>
<td>6.3</td>
</tr>
<tr>
<td>35-44</td>
<td>3.3</td>
<td>3.3</td>
<td>6.7</td>
<td>40.0</td>
<td>40.0</td>
<td>6.7</td>
<td>0.0</td>
</tr>
<tr>
<td>45-54</td>
<td>3.1</td>
<td>3.1</td>
<td>12.5</td>
<td>50.0</td>
<td>18.8</td>
<td>9.4</td>
<td>3.1</td>
</tr>
<tr>
<td>55-64</td>
<td>0.0</td>
<td>12.5</td>
<td>31.3</td>
<td>31.3</td>
<td>18.8</td>
<td>6.3</td>
<td>0.0</td>
</tr>
<tr>
<td>65-74</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

4.6 Health Education

4.6.1 Barriers to Providing Health Education

The majority (58%) of participants reported that time was always a barrier for them providing health education; 33% reported it was a barrier sometimes, and 9% said rarely or never. Despite low levels of additional training in the subject areas, lack of knowledge of healthy lifestyles was not reported as a barrier for the giving of health education for nearly half of the participants (49.5%); 37.1% said it sometimes was and 13.5% mostly or always.

4.6.2 Health Education Role

Half of the participants (51.2%) believed nurses who engage in unhealthy behaviours were less likely to provide health education to their patients. The role of the RN was considered highly important in health education by 85.7% of participants.
4.6.2.1 Giving Regular Advice on Four Risk Factors

Sixty percent of the participants reported giving regular advice on reducing or quitting smoking, 38% reported giving regular advice on drinking alcohol in moderation, 36% on reaching a healthy weight, 42% on increasing physical activity, and 42% on eating healthy food or improving diet. No regular advice was given on any of the health behaviours of interest by 14% of participants. However, in the absence of data on the current area of employment, the prevalence of participants not providing regular advice may simply reflect the type of role they were currently undertaking.

4.7 Summary of Quantitative Results

Overall, though a small sample, there was a clear gap in both the adherence to healthy behaviours and provision of health education by participants. The cohort consisted of mostly females with the average age being mid-forties. On average the RNs in this study smoked less than the general population; consumed alcohol at levels which, according to the national guidelines, put them at both lifetime and single occasion risk; and while most adhered to dietary guidelines regarding fruit and vegetable consummation, they did not exercise enough to be classed as sufficiently active. Two thirds of the cohort self-rated their health as good or very good, and just over half self-rated their weight as overweight. This was inconsistent with the calculated BMI according to weight and height which showed more than two-thirds were overweight or obese according to the national guidelines. Almost all participants had at least one of the identified health risk factors with the majority having between two and four. Just over half of the participants believed that RNs who engage in unhealthy behaviours were less likely to provide health education to their patients. This is at odds with the belief held by the majority that an RN has an
important role in the provision of health education. The barriers to the provision of health education of time and knowledge that were identified in the literature, were supported by the quantitative and explored further in the analysis of the open-ended questions from the survey.

4.8 Content Analysis of Open-ended Questions from Phase one

4.8.1.1 Perceived Barriers and Strategies to Overcome Them

The final section of the questionnaire contained open-ended questions to allow for answers to be provided in the participants’ own words. Participants were asked to respond to open-ended questions relating to:

1. Perceived barriers to delivering health education to the people they care for;
2. Barriers RNs face in adopting and maintaining healthy behaviours themselves;
3. Suggested strategies to overcome these barriers.

Full details of the results, including quotes and frequency of responses are provided in the following three tables (Tables 4.10–4.12).

For the first question regarding perceived barriers to delivering health education, 26 usable responses were received. Two major and two minor categories were present in the responses regarding barriers to delivering health education. This was decided upon according to the number of times the terms came up in the data. The major categories included: time and perceived patient resistance, whilst the minor categories were nurses’ own health, and not their role. Full details of the results, including quotes and frequency of responses are provided in Table 4.10.
Table 4.10. Barriers to delivering health education

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>42.1%</td>
<td>Time limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time when working in an acute hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pt ratio too heavy, time, pts willingness to listen!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not enough time spent with them and not enough quick easy resources we can give them in the short amount of time we have with them</td>
</tr>
<tr>
<td>Perceived patient resistance</td>
<td>39.5%</td>
<td>Coming up against very ingrained lifestyles of patients with habits that they perceive are very hard to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People are not generally receptive to advice or are unwilling to change bad habits</td>
</tr>
<tr>
<td>Own health</td>
<td>6.6%</td>
<td>My own health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practising what you preach ...</td>
</tr>
<tr>
<td>Role</td>
<td>3.95%</td>
<td>I hear doctors doing it, and I feel, while a doctor can &quot;get away&quot; with doing this, they may be very offended if I do it, plus I am usually rushing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I don’t know ... can I tell my patients to stop smoking - not really this is imposing my values onto them - but I can advise them about QUIT, patches, etc. to help if they WISH to give up smoking; I only offer information if it is indicated by the patient - ... if I was caring for an obese patient, I would not start giving them information about weight loss and diets as this is not my place to do this - ... I would refer them to a psychologist if the patient indicated that they wanted help with weight loss ... our dieticians ...do not see patients who are requesting weight loss only ... weight gain). We as nurses need more education on how to give education to patients regarding health/lifestyle issues, especially with obesity and chronic diseases on the rise. I don’t t think time is a barrier - as you can talk to your patient regarding health/lifestyle issues at any time - such as when you are showering your patient, or doing obs, etc.</td>
</tr>
</tbody>
</table>

The second question regarding perceived barriers RNs face in adopting and maintaining healthy behaviours themselves elicited 78 usable responses and coding was carried out as above. The major categories identified included: shift work and long working hours; time and family commitments. Minor categories included: tiredness and fatigue;
motivation; lack of proper meal breaks; and lack of resources or education. Full details of the results, including excerpts from the results, are provided in Table 4.11.

Table 4.11. Barriers to RNs own adherence to healthy lifestyles

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift work, long working hours</td>
<td>61.5%</td>
<td>Working shift work has always been a struggle for myself in trying to maintain healthy behaviours. Shift work and being on our feet all day, early starts, makes me tired, so I am more reluctant to go to the gym or go for a run. Doing shift work makes it hard to get into a good routine with diet sometimes also. Shift work is a major barrier as this leads to ad hoc meal times, exercise and potential for sub-optimal hours of sleep.</td>
</tr>
<tr>
<td>Time, family commitments</td>
<td>47.4%</td>
<td>Time poor. I go to work, long hours, then come home to family, kids, chores and it is often extremely difficult to find ten minutes to do a survey let alone find 30 minutes to walk around the block. For nurses themselves–time and fatigue play a big role in the barrier.</td>
</tr>
<tr>
<td>Fatigue, tiredness</td>
<td>12.8%</td>
<td>Tiredness as you can't be organised to achieve this but I believe there is really no excuse. Shift work ... lack of time for breaks ... tiredness which contributes to less time to cook/prepare healthy food.</td>
</tr>
<tr>
<td>Lack of support, education</td>
<td>9%</td>
<td>Attitude &amp; lack of knowledge.</td>
</tr>
<tr>
<td>Meal breaks</td>
<td>7.7%</td>
<td>We are our own worst enemies, rushing meal breaks, snacking on junk, crappy shifts so we are more tired than normal. Additionally, most days at work I've been that busy I haven't taken my full break or decide to eat something unhealthy because it's quick and easy.</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.9%</td>
<td>Just like any other person, being an RN doesn't make me exempt to lack of motivation, bad habits and wanting, but finding it difficult to eventuate change.</td>
</tr>
</tbody>
</table>
The third question requested participants to suggest strategies to overcome their perceived barriers to adopting and maintaining healthy lifestyles. This question had a response rate of 64, and three major and one minor categories were elicited from the data: prioritising, planning and making time; better rostering and improved work-life balance; education and workplace support. Full details of the results, including excerpts from the results, are provided in Table 4.12.

Table 4.12. Strategies to overcome barriers to healthy behaviours

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritising/planning/making time</td>
<td>34.4%</td>
<td>Taking the time to plan healthy meals ahead of time and ensure that healthy snacks are bought to work all the time so that the temptation of vending machine food is not there. Enforce more time-out for themselves.</td>
</tr>
<tr>
<td>Better rostering/improved work-life balance</td>
<td>28%</td>
<td>If shift rotation must be done, do ... shifts in blocks so that a routine for eating, sleeping and living can be established. Regular rotating roster ... to allow regular time to schedule things 8-hour shifts should be the standard. Hour long lunch break to allow the opportunity to use work gym or go for a walk outside.</td>
</tr>
<tr>
<td>Education and workplace support</td>
<td>28%</td>
<td>They have put a gym on site. Access to dieticians and physio to help plan meals and fitness for free would help and a healthy cheap food café too Not much we can do about shift work or being on our feet. At our hospital they had a weight loss competition a few years ago ... people got weighed ... over a period of time ... they then got weighed again to see which team lost the most amount of weight. I think this was great. ... lots of staff got really excited about this concept. ...more of this ... would be good. Maybe ... discount on our gym fees or organise an annual fun run for health staff and their families in the district.</td>
</tr>
<tr>
<td>Category</td>
<td>Percentage</td>
<td>Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would love some work orientated exercise groups or even corporate membership to gyms or boot camp or exercise group or yoga groups.</td>
</tr>
<tr>
<td>Role models</td>
<td>4.7%</td>
<td>Get RN’s to become aware of their standing within the community and become role models Focus on preventative health care</td>
</tr>
</tbody>
</table>

### 4.9 Thematic Analysis of Open-ended Question

Participants were asked whether they believed that nurses who engage in unhealthy behaviours are less likely to counsel their patients on these behaviours. The answers were divided into those who believed they were less likely and those who did not.

Three themes were derived from the data of those who believed nurses who engaged in unhealthy behaviours were less likely to counsel their patients on these behaviours: hypocrisy; credibility and role modelling; and self-efficacy and self-motivation. Each of these themes will be explored separately.

Hypocrisy was a very dominant theme that emerged early on in the data. This came from both the nurses own perspective and the perceived perspective of the patients they care for.

*For me, I find it more difficult to give education on healthy weight when I am overweight myself. (Survey respondent 71)*

*It’s easy to give education on healthy behaviours, however, up until I quit smoking six months ago I always felt like a hypocrite when advising others to quit smoking.*

*I think people who are engaging in healthy behaviours would be more likely to*
provide education as people who don't would probably feel ashamed or feel like a hypocrite. (Survey respondent 98)

How is a patient going to take a nurse seriously when she talks about giving up smoking when they can smell cigarettes on their breath? Or if the RN is talking to them about losing weight or their chances of getting diabetes will increase, when the RN is overweight. (Survey respondent 52)

The participants felt that patients would perceive them as hypocritical if they were not seen to be adhering to the advice they were giving. This sometimes led to them abstaining from giving health education on a particular topic they did not feel they were adhering to themselves. Credibility and role modelling was the next main theme that emerged, being able to feel like they had integrity when giving health education.

If you aren’t walking the walk you can’t talk the talk. Nurses who are overweight, smoke, eat loads of takeaway do not portray healthy habits to patients and patients would be less likely to want to change if they see that in nurses who do the same as themselves. (Survey respondent 57)

There is obviously no “lead by example” attitude. Very hard to lecture someone on weight loss when the nurse is very overweight and be credible. (Survey respondent 62)

Nurses are considered as role models, if a nurse isn’t living up to the standards they should be living up to, they may feel they are not suitable in giving advice on healthy lifestyle choices. (Survey respondent 86)
Feeling credible in the health education role and living up to the perceived expectation of patients and society as role models for health was consistently mentioned as influences to RN behaviour and beliefs. The final theme was that of self-efficacy and self-motivation related to the reluctance to give health education.

*I think you have to believe in the behaviour and also know it is possible to achieve this with little difficulty.* (Survey respondent 25)

*I think people who tend to not value health habits themselves are less likely to promote them.* (Survey respondent 80)

*More likely to sympathise with patient about being time poor and stressed and not able to give helpful hints on how to fit healthy eating or exercise into the day because unable to achieve this themselves.* (Survey respondent 56)

This theme highlights views that the RNs’ own values of health and the ability to achieve good health influence whether they provide health education to their patients or whether they impose their own perceived barriers and not give advice.

Three themes came from the data of those nurses who responded that they believed that nurses who engage in unhealthy behaviours are *not* less likely to counsel their patients on these behaviours: “Do as I say, not as I do”; ability and confidence; and part of the job. Each of these themes will be explored separately.

“Do as I say, not as I do” was the main theme emerging from the data, with a number of nurses expressing that their own behaviours should not necessarily impact on the healthy advice they give.
Nurses know what we should all be doing and while we may not be able to fully engage in these behaviours this does not stop or restrict us from providing the information’s that can help other individuals to endeavour to live a full healthy life through healthy eating and regular exercise. (Survey respondent 12)

Because when it comes to looking after patients and providing education, this is not really taken into consideration what we do in our own lives. It’s like the saying do as I say, not as I do. (Survey respondent 67)

We know the right things to do and can teach this but don’t necessarily practice what we preach. (Survey respondent 75)

Thus the belief that patients will listen to the health education regardless of the credibility of the person giving it to them is expressed here. These participants relayed that they give health education on topics they may not abide by themselves. Ability and confidence was the next most common theme emerging, with nurses imploring that it has no relevance to their ability to give health education, that their training is enough and their own experiences make them more “believable” to patients.

You don't need to have cancer to understand and provide education in the area.

Same can be said for having a baby. It isn't necessary for midwives to have given birth. (Survey respondent 8)

Because nurses are trained professionals, able to advise people on a wide range of health issues. Just because they may not follow their own advice doesn’t mean they can't deliver health education. (Survey respondent 23)
Just because I drink like a fish at home, does not mean I cannot give good advice on what is good practice to my clients. I am overweight but not morbidly obese so my clients do listen to my advice. They tend to feel that as I am a bit overweight, I understand the challenges they themselves face. They agree that it is easier taking advice from me than from a “stick person” who lives at the gym and does not relate to reality. (Survey respondent 32)

The participants reported that their knowledge and experiences made them more relatable and authentic and that they believed patients felt they could understand the challenges and barriers to achieving good health. The third theme is that of acknowledging the giving of health education as part of nurse’s role or job.

Patient education is an integral part of an RN’s job and usually done fairly well.

Unfortunately, many RNs do not heed their own advice. (Survey respondent 1)

It’s in the care-plan. Therefore, it has to be addressed, no matter what an individual’s lifestyle is like. However, those that live it probably have a better understanding of what constitutes a healthy lifestyle therefore are most likely to better impart the information. (Survey respondent 5)

As nurses we have the duty of care which includes health education. (Survey respondent 88)

Some participants found that having health education as part of their everyday duties ensured it was given regularly, they also understood it was regulated by the registering body and therefore should be mandatory.
The results of Phase one informed the formation of the interview questions in Phase two of the study. The prevalence of unhealthy risk behaviours in the respondents and whether these impacted on the provision of health education needed to be explored further. Also, as the majority of respondents had indicated that RNs should be role models for health, a deeper understanding of the beliefs underlying this response was sought with the interviews. Finally, they aimed to examine whether the key themes elicited through the open-ended responses correlated with the interview transcripts.

4.10 Conclusion

This chapter has reported the results of Phase one of the study. The demographic results have been provided along with details on the prevalence of health behaviours of the participants. Health education advice and extra training in each of the areas were also statistically explored. The commentary around the content and thematic analyses of the open-ended responses adds an extra dimension to the statistical analysis. The Phase two interview questions were guided by the results of Phase one. The findings of Phase one have provided valuable information around the prevalence of health behaviours and the perceived barriers and strategies. Chapter five will present the findings of Phase two.
Chapter 5. Phase Two Findings

5.1 Introduction

In this chapter, the findings from Phase two of the study are presented. Phase two involved a series of semi-structured interviews. All of the participants had participated in the survey (Phase one of the study) and were therefore drawn from the same sample. Participants contacted the researcher using the email contact details provided at the end of the online survey to volunteer. In keeping with the sequential explanatory design chosen for the study, a separate qualitative data collection and analysis phase was undertaken. Phase one results elucidated some key points including: on average the participants smoked less than the general population; consumed alcohol at levels which put them at both lifetime and single occasion risk according to the national guidelines; mostly adhered to dietary guidelines regarding fruit and vegetable consummation but did not exercise enough to be classed as sufficiently active. Some common barriers to adhering to healthy lifestyles cited were shift work, long working hours and family commitments. Phase one also found that although 43% of participants thought the role of the RN in health education was extremely important, this did not always equate to the giving of health education on a regular basis. Some barriers identified to giving regular health education were the lack of time, own health and perceived patient resistance. Themes that emerged from those who engaged in unhealthy behaviours and who were less likely to give regular education included hypocrisy, role modelling, “do as I say, not as I do”, and ability and confidence. These results then guided the formation of the semi-structured questionnaire that was used in for the interviews in Phase two (See Appendix H). This chapter initially gives a description of the study participants using a numbered code to maintain confidentiality. It then gives a detailed portrayal of the themes that
emerged from the interviews. The literature has then been explored with respect to the identified themes in various contexts, not only nursing, to gain a greater understanding of the concepts.

5.2 Participants

Interviews were undertaken over a period between 7th May 2015 and 27th May 2015 at a time and location convenient for each participant. Three interviews were undertaken over the telephone. The participants were from varying work settings both in the community and in acute wards in a number of hospitals. These included cardiac care, nuclear medicine, surgical, medical, short stay, maternity, renal, and general practice.

5.3 Data Analysis and Findings

In Chapter three the framework of the data collection procedures for Phase two was provided. In summary, these consisted of a series of eight semi-structured interviews. Each interview began with an outline of the research objectives and interviewees being provided with a copy of the plain English summary for participants of the Phase one results if they had not already read them.

Following the coding scheme outlined by Saldaña (2012) during the first cycle process of analysis, participants own words were entered into NVivo and a large number of nodes were extracted. Focused coding followed, allowing the researcher to develop categories from the nodes. The use of axial coding then facilitated the determination of which categories were the most dominant, further reassembling the data into the subthemes. Selective coding was the culminating step in the process, further condensing the subthemes and producing two main themes.
Based on the analysis, the two major themes identified were: role modelling; and lack of priority. The themes and subthemes are illustrated in Figure 5.15.

![Themes and Subthemes Diagram]

Figure 5.1. Themes and Subthemes

Each sub-theme will be explored separately before discussing their major themes.

5.4 Role Modelling

Given the focus on role modelling that emerged from the Phase one data, it is not surprising this is reflected strongly in this first theme and was touched on throughout the interviews by all participants in varying degrees. Role modelling is derived from three subthemes: “Beliefs and personal behaviours”; “Patient perceptions of nurses”; and “Leading by example”. Each of these subthemes will now be explored separately prior to a deeper explanation of the major theme, “Role modelling”.

5.4.1 Beliefs and Personal Behaviours

The first sub-theme is “Beliefs and personal behaviours” whereby the participants’ beliefs about themselves and their role in health education influences them in their practice. There were varying responses from participants from believing that their own behaviours did not influence the giving of health education, as one participant stated:
I know we’re really bad at, like you say; do as we say—not as we do. We are good, most of us, on the whole, of educating patients, but we’re always the one out there on our break smoking and eating rubbish. (Participant 4)

Other participants believed that their own behaviours and personal achievements enhanced the education experience:

I personally believe what I’ve achieved with myself adds to how I can teach people.

(Participant 3)

This is also echoed by another couple of participants who related:

I try and eat well and I don’t exercise as much as I probably should ... I don’t drink, I don’t smoke. (Participant 5)

I hope when they do see me I hope ... if I do say something, they might think she knows what she’s talking about because she does this and look at her, it obviously works for her. (Participant 7)

Sometimes the participants’ own behaviours had an adverse effect on the giving of health education as demonstrated by the following participant’s comment:

I don’t preach smoking as much as I do about diet, because I’ve succeeded in that area. (Participant 3)

Overwhelmingly the participant’s beliefs were shown to influence their behaviours and in turn whether or not they felt justified in their decisions to give or not give health education to their patients. Those who engaged in healthy behaviours were more likely to feel confident in their ability to give effective education.
5.4.2 Patient Perceptions of Nurses

The participants all voiced opinions on what they thought the patients thought about them. Some of the participant’s believed patients would be less likely to listen to a nurse who was trying to give education on weight loss who did not look like they followed their own advice, as evidenced in the comments below:

*I think it's 90% appearance, 10% of what you say ... You need to be well groomed. You really need to be of some kind of fitness ... I don't think coming and telling somebody that you need to lose weight or you need to stop smoking, from somebody that's obese and a smoker would come off too easily. It certainly wouldn’t to me.* (Participant 5)

This is again voiced by another participant in the next comment:

*I would be harder for someone who is overweight and a smoker and doesn’t exercise to tell a patient who is fat and overweight, you’d better lose weight and you’d better exercise and stop smoking and eat better. I don’t think they’d take it as seriously as say if someone who was smaller and looked like they may exercise and eat better.* (Participant 7)

Another participant voiced similar concerns in regards to patients’ perceptions of smokers giving advice on smoking cessation. This can be seen in the following comment:

*It's hard for someone who is a smoker to tell say a COPD [Chronic obstructive pulmonary disease] patient that who probably should stop smoking. It’s like yeah maybe you should too!* (Participant 8)
One participant linked it to the patient’s perceptions of them and their feelings of self-efficacy by seeing someone similar to themselves achieving success:

   *It’s sort of like, oh okay, if a short, fat 50 year old can do it I should be able to do it too.*  (Participant 1)

This sub-theme highlights the perception of nurses that they are being judged by patients and that to be seen as credible they must “walk the walk and talk the talk”. They felt patients will consider nurses hypocritical if they try to give health advice that they clearly are not abiding by themselves and will therefore not take it seriously or pay attention. Conversely, they felt if patients did see nurses engaging in healthy behaviours, they may believe they could achieve the same.

### 5.4.3 Leading by Example

The third sub-theme is “Leading by example” and again this had varying responses, with most participants believing nurses should lead by example but acknowledging that it does not happen on a regular basis. This is evidenced by one comment:

   *I would like to think we do lead by example but looking at our staff, you wouldn’t think so because there’s quite a few overweight ones.*  (Participant 6)

This is further supported by another participant’s observation:

   *Some nurses are big and don’t exude health as much as others.*  (Participant 2)

Whereas others have a strong need to be seen as a good role model and to lead by example. The following response sums it up nicely:

   *I think you need to be a good example and a role model.*  (Participant 5)
An ex-smoker gave up because of the strong need to be seen as credible in her role:

*I used to be a smoker. I gave up soon enough, especially when you can’t turn up smelling of cigarettes or anything like that to a public meeting or a one-on-one conversation where your vascular access is failing because you’re smoking.*

*(Participant 7)*

Using themselves as examples of perseverance in the aim of losing weight and staying healthy was also common as asserted by one participant:

*I say, I’m hearing you—female, fat and 50. Takes a lot to lose but you’ve just got to chip away at it. I go to gym every couple of days or if I can’t get to the gym, walk the dog. She hates me but between the two of us we get there.* *(Participant 1)*

Leading by example in health and engaging in healthy behaviours allows nurses to feel credible when providing care and health advice to patients. It acknowledges that we are all human and it is a constant struggle to maintain healthy behaviours; but as a nurse, it is inherent in our role and profession to strive to be the face of good health. This leads into the overarching theme of “Role modelling”.

### 5.4.4 Role Modelling in health education

Role modelling is known to be an important and valuable educational method. If nurses are to be role models for their patients, they need to be seen themselves as adhering to the health education they are expected to give to their patients. If they are not giving education on topics they are not comfortable with because they feel hypocritical, for example, smoking, then they are not providing holistic care to their patients, according to the RN standards for Practices 2 and 3 *(NMBA, 2016)*. Another consideration is that if
they do give education about diet to an obese patient when they themselves are obese, is it as effective as if it was given by a nurse who is a healthy weight? It is evident from the above anecdotal evidence that some nurses do feel conflicted when they engage in unhealthy behaviours. However, others believe it makes no difference and follow the institution protocol to deliver the same advice to all patients. To understand the significance of role modelling in health education and nursing it is necessary to understand some of the behavioural theory underpinning how we learn.

Role modelling is a significant part of SCT. This theory suggests that people learn what to do and how to behave principally by observing and emulating role models (Bandura, 1986). SCT provides a theoretical framework for analysing the psychological manners that direct human behaviour, its aim is to clarify how behaviours develop, are maintained and by which methods they can be modified (Wulfert, 2014). The concept of observational learning or “learning through modelling” has been used in various situations by providing credible role models who perform the desired behaviours for the target population, and individuals in this way can learn behaviours without having to undergo trial and error experiences themselves (Sanderse, 2013; Wulfert, 2014). The implications of SCT for learning in the clinical setting are abundant. Utley (2011) urges nurses to use critical and reflective thinking strategies to support the learner/patient in identifying both positive and negative consequences for behaviours and evaluate what they have observed in the hopes of promoting positive behaviours and discouraging negative behaviours.

5.4.5 What Does the Literature Say about Role Modelling?

Role modelling has been examined in a variety of contexts throughout the literature. Mileder, Schmidt and Dimai (2014, p. 1) defined role models as “people we can identify
with, who have qualities we would like to have, and are in positions we would like to reach”. In a case report on the impact of negative role modelling in medicine, these researchers found that while most clinical staff are conscious of their responsibilities as educators and role models, and try to hold themselves to high standards, workload, inexperience, lack of knowledge and little motivation to teach, can lead to poor role modelling (Mileder et al., 2014). They surmised that clinicians need to be aware that all of their dealings, personal views, and attitudes affect those who observe them and strategies need to be implemented to raise awareness among health professionals of the significance of role modelling, including self-reflection, personal and professional development, time to teach and also offer institutional support (Mileder et al., 2014). For this reason, it can be said that health professionals are role models at all times whether they want to be or not.

Another study by Cruess, Cruess and Steinert (2008) found that role modelling is more often negative rather than positive, stressing that we are role models at all times whether actively educating or in social situations, and need to remember that learning from role models transpires via observation and reflection both subconsciously and consciously. Role models need to teach and inspire by example and it is necessary to evaluate our own personal strengths and weaknesses as role models as well as the institutional culture and its impact on teaching (Cruess et al., 2008). They posit barriers such as overwork, lack of time for teaching, lack of support, an ethos that accepts substandard patient care and unhealthy relationships (Cruess et al., 2008), also stressing that nobody is a perfect role model but we all need to be as consistently good as we can be.
When discussing what makes a role model and how we become seen as one, Spurgin (2012) discusses the ways people are assigned role model status and the ensuing obligations attached to this. He argues there are two broad views, one being that someone becomes a role model voluntarily and that the obligations only apply to the particular field associated with that status, for example, a professional sports person or professor. The latter view is more general and applies to those individuals both in their public or professional lives and in their personal lives (Spurgin, 2012). Within this there are roles that bear an assumed role model status such as parents, judges, health professionals and police officers; taking on these roles requires the individual to behave appropriately, some for fear of losing employment.

To further reinforce this concept, a study by Rosenbloom, Pereg and Perlman (2014) on police officers, ascertained that they are expected by the public to serve as an example and help shape the norms and behaviour of citizens. The importance of being positive role models to the public to boost public cooperation and compliance was found to be paramount. Parents are also constant role models for their children, and modelling can be intentional or unintentional. In a study by Palfreyman, Haycraft and Meyer (2013) of 264 mothers with a child aged between 1.5 to 8 years, found that mothers who were more conscious of their own healthy eating behaviours were also more aware of unintentional modelling to their children. The study concluded that modelling may be a useful strategy for promoting healthy interactions. From the above discussion on role modelling, it follows that we are all role models to different people in different circumstances. However, for some professions, just by deciding to enter into them, it is inherent that one accepts the mantel of respect and admiration from others. Within that is the
responsibility to act appropriately to uphold and earn that respect, that is, be a good role model.

5.5 Lack of Priority

Lack of priority is the second theme emerging from the interview data. This theme relates to both the nurses and the patients. It is derived from three subthemes: “Time”, “Futility”, and “Not being heard”. Each of these subthemes will now be explored separately prior to a deeper explanation of the theme “Lack of priority”.

5.5.1 Time

The first subtheme, “Time” was frequently mentioned by participants as a barrier but also occasionally as a facilitator to the giving of health education. One participant that gave examples of time as a barrier stated:

Due to our workload, if we’ve got someone that needs ... health education ... we don’t have time ... we’re too busy doing all the clinical stuff that really needs to be done. (Participant 3)

This understanding of time as a barrier related to the staffing and skill-mix within the workforce:

A lot of it [health education] doesn’t go on at present. We’re very under-staffed and our skill-mix is poor. We don’t have time to spend with our patients and educate them on things. (Participant 2)

Further, the short time patients now spent in hospital was also indicated as a barrier to giving adequate education:
In the hospital situation unless you had a dedication person going around doing education, a lot of the staff are quite busy ... even in a maternity ward trying to get time to really educate mums in those first few days after delivery, because they often go home very quickly, it was really hard. (Participant 8)

One participant responded that to combat this they just gave out brochures rather than take the time to educate patients:

We do have different brochures on different things ... there’s not a lot of patient health education. It’s not probably a priority I suppose that I’ve really seen.

(Participant 5)

However, not all participants saw time as a barrier, although they acknowledged that this may be dependent on particular circumstances. One participant related that they did have more time to spend with patients stating:

We’re kind of lucky ... not a lot of time are we that flat out that we can’t spend that time ... that’s the beauty of our unit; we can sort of go through things with them, and if we don’t know the information we can source it. (Participant 4)

From this we can see that time can be an enabler or barrier, depending on the area in which nurses are working. In acute wards, where clinical skills and patient flow are the driving force, and where the skill-mix is variable and workloads are high, patient education falls to the bottom of the priority list. In areas not so busy, and with adequate staffing, time can be spent giving health education.
5.5.2 Not Being Heard

The second sub-theme identified in the interview data revealed a level of frustration, that health education provided by nurses was not being heeded by patients; that nurses were “not being heard”. One participant described this concept in the following manner:

_Some of them you just want to slap because they don’t listen to you anyway and they just expect the doctors to perform miracles._ (Participant 5)

This was echoed by others who also expressed frustrations with perceived patient resistance:

_any sort of health education I think you give them, I don’t know if they really listen anyway because they just want to keep doing what they’re doing._ (Participant 4)

Persistence and giving the same education to all patients in an almost rote way as specified by facilities’ guidelines was one of the approaches to try to circumnavigate the feelings of not being heard by patients that need the education the most:

_I just go through it in the same way, but with particular attention to those that really, really need it, because there are quite a few what I guess we’d class as bariatric, almost, patients, BMIs greater than 35. A lot of them you’ll find as well they’ve all been referred onto dieticians and specialists in that field, but they don’t see it as a problem, so that’s part of the way is getting through that and being tactful about it in how you approach them, too. I’m trying to refine my education for them._ (Participant 6)

The perception of not being heard when they did try to give health education to patients was often reported by the participants, and they each tried to deal with it in different
ways. Some persevered by trying different tactics, others gave the same information to all patients so that they could tick the boxes to say it was done, some wondered whether it was even worth it, while some just gave up and didn’t try any more, which leads into the next sub-theme.

5.5.3 Futility

Finally, the third sub-theme reinforced the frustrations associated with the first sub-theme, such that the participants perceived that it was often futile in even trying to give health education to patients, as evidenced below:

I said that’s related to your diabetes and being overweight and alcohol and smoking and everything. He said “look, I don’t work, I’m on the pension, my life is my tinny and getting my mate and we go out and camp overnight. We take our booze and we drink and we barby and smoke and fish. I’m not giving that up for anyone.” (Participant 3)

Another participant spoke about the age of patients and entrenched habits that are hard to break.

They’re at the age where you can’t tell them and they’re not going to change their eating habits to a huge extent. (Participant 1)

Another participant related that the acuity of the patients really impacted on how much the patients benefited from the education given:

I think community-based education works a lot better for the patient ... they get a lot more out of it. Even though they might have a chronic health condition they’re
relatively stable and well. But when they’re in a hospital situation they’re in hospital because they’ve become unwell. (Participant 8)

The willingness and ability of patients to want to accept the advice on their health education and to make the appropriate changes is dependent on many variables as voiced above. Some behaviours are so entrenched that it is difficult to become motivated to change and the participants found this challenging.

5.5.4 Lack of Priority in health education

If we want something badly enough, we will make it a priority. If it appears to be too hard, not achievable or inconsequential, chances are we will not make it a priority. The above subthemes of time, not being heard and futility all suggest a lack of prioritisation of the giving of health education to the patients. If the nurse does not view health education as a priority, they will not find the time to do it on a regular basis. If the institution they work in does not value health education, they will not give nurses the time to deliver this in their workloads. If the nurses do not believe the patients will take on the advice, they will not make it a priority. If the patients do not heed the health advice given and present continually with the same issues or argue the point and say they are not going to try to make healthier choices, nurses start to believe even trying is futile and therefore prioritise other care. To appreciate this theme, it is worth revisiting briefly the model of SCT and where this may fit.

5.5.5 What Does the Literature Say about “Lack of Priority”?

The next section highlights the literature relevant to the concept of “lack of priority” in areas other than nursing. Making teaching a priority when it is not the main focus of the institution is not just confined to nursing staff and patients. Cruess et al. (2008) stress
that despite the challenges of clinical demands, health professionals must “protect time” in order to prioritise teaching, and strategies need to be put into place to combat a lack of institutional support for teaching. Another study by Evans and Tress (2009) looked at what motivates 18 academics employed at a research-focused university in the United Kingdom (UK) to want to teach effectively despite it having a low priority for both themselves and the institution. It was found that the academics’ motivations were linked to their self-efficacy beliefs and sense of achievement so that they made the time to still teach well (Evans & Tress, 2009).

An exploratory qualitative study by Nugent, Carson, Zammitt, Smith and Wallston (2015) of 13 adults with insulin-treated type 2 diabetes (T2DM), discovered that the imperative for T2DM patients to make the necessary healthy lifestyles changes was reliant on the patient’s health values and self-efficacy. They showed that after diagnosis, most patients made health a “priority”. However, differences in health values and self-efficacy impacted on the self-management behaviours, with some lamenting the lack of priority they had given their health up until diagnosis (Nugent et al., 2015). Lack of priority for health is not just limited to the individuals themselves. Lack of priority of health is shown in the article by Morrice and Colagiuri (2013) examining the conflict of power and priorities in coal mining and health, where they argue that economic gain takes priority over human and environmental health, as, despite the litany of research showing the negative health effects of mining, it does not seem to be taken into consideration by the companies or governments.

Constant pressures to increase patient flow are challenges for all health professions and impact on how they prioritise their workloads. A mixed method study by Harding, Porter,
Horne-Thompson, Donley and Taylor (2014) of 60 allied health professionals showed that they are prioritising direct clinical care over other important activities such as evidence-based practice because the increasingly rapid pace of health care and the pressure to keep the flow of patients moving, leads to feelings of guilt if they engage in any activity that is not seen as directly contributing to the eventual discharging of patients.

5.6 Conclusion
This chapter has discussed the findings of Phase two of the study. First, the subthemes of “beliefs and personal behaviours”, “patient perceptions of nurses” and “leading by example” were explored separately before the first main theme of role modelling was elucidated. This theme was then explored further in the literature to give better context to the findings. Next, the subthemes of “time”, “futility” and “not being heard” were discussed separately before the second main theme of “lack of priority” was argued. Again the literature was explored to give this theme context in a broader sense. From this it becomes clear that the themes of “role modelling” and “lack of priority” are consistent with the SCT and not just limited to the nursing profession. “Role modelling” is important in all areas of the community and paramount in some professions, nursing being one of these. “Lack of priority” given to health education and health itself is also seen in other areas and within the community. The following chapter will explore these themes further, specifically within nursing.
Chapter 6. Discussion and Implications

In this chapter the key findings are summarised, interpreted and discussed which answer the research questions:

- **What is the prevalence of Registered Nurse’s own adherence to the health risk behaviours they are expected to promote to patients in the sample region?**

- **What beliefs do RNs have regarding the impact of their own health risk behaviours on the health education advice they provide to patients?**

Throughout this discussion, newly released global, national and regional strategies and policies to combat the rising incidence of non-communicable diseases will be drawn upon to explain the importance of nurses better understanding the impact of their own healthy behaviours on their own lives as well as on the health education they provide. This discussion will necessarily incorporate the Australian nursing practice standards.

Barriers to adhering to healthy lifestyles are discussed in relation to the current literature as are the strategies proposed by the participants in this study. Nurses beliefs around their role in health education and the impact of their own behaviours on this role is examined followed by the barriers they face in providing this education. This chapter will argue that while RNs are in a prime position to provide health education to the people they care for, there are many factors that influence their ability to undertake this on a regular basis. Lastly, it will also argue that while the RNs health-risk behaviours influence both their attitudes and education provision, improving the RNs perceived self-efficacy may be a successful strategy to address this issue.
First, an overview of the key findings of both phases of the research. Phase one of the study elucidated some key points including: on average the RNs in this study smoked less than the general population; consumed alcohol at levels which, according to the national guidelines, put them at both lifetime and single occasion risk; and while most adhered to dietary guidelines regarding fruit and vegetable consummation, they did not exercise enough to be classed as sufficiently active. Additionally, more than two thirds of the RNs in this study were considered overweight or obese according to their calculated BMI. Some common barriers to adhering to healthy lifestyles cited were shift work, long working hours and family commitments. The participants suggested various strategies to enable them to adhere to healthy lifestyles including: prioritising, planning and making time; better rostering and improved work-life balance; education and workplace support. While 43% of participants believed that the role of the RN in health education was extremely important, this belief did not always translate to delivering health education on a regular basis. Barriers identified to giving regular health education were the lack of time, their own health and perceived patient resistance. Themes that emerged from those who engaged in unhealthy behaviours and who were less likely to give regular education included hypocrisy, role modelling, “do as I say, not as I do”, and ability and confidence. Phase two findings from the interview data included two major themes; “Role modelling and “Lack of Priority”.

Relating this to Social Cognitive Theory, health education and the adopting of healthy lifestyle behaviours is dependent on self-efficacy and thus applies to RNs both with their own behaviours and their provision of health education to their patients. According to Bandura (2004), self-efficacy is one’s personal judgement of having the capacity to carry
out a specific behaviour or make a specific change. The higher a person’s efficacy, the more likely they are to feel motivated to persist in attaining their goals and navigating perceived barriers. Furthermore, Gandoy-Crego, Clemente, Gómez-Cantorna, González-Rodríguez, and Reig-Botella (2016) argue that self-efficacy in health-related issues involves the adherence to healthier lifestyles and is a crucial component of successful health education. Specifically for this research, RNs with higher self-efficacy could be expected to be aware of their health and maintain healthier lifestyles enabling them to be confident as role models for health. Although not specifically measured in this research, the themes outlined in Chapter five strongly suggest further research is necessary into examining the relationship between self-efficacy in RNs, their own health behaviours and the health education they provide. Improving perceived self-efficacy may indeed be a successful strategy in improving RNs health-risk behaviours and education provision.

The findings of the current study illustrated that nurses who had achieved success in certain areas such as losing weight, increasing physical activity and/or stopping smoking felt more motivated to adhere to the recommended guidelines and confident as role models for good health. They were also more likely to feel confident in educating patients on the behaviours they had success in achieving. Whereas those who smoked or were overweight were less confident in providing education and more likely to feel hypocritical and avoid these topics with patients. Other researchers have found similar results reporting that nurses felt patients would heed advice given by healthy role models and that this would add credibility and validity to the health education they gave whilst also reflecting well on the organisation where they work (Blake & Harrison, 2013; Blake &
Confidence and self-efficacy in overcoming barriers and providing regular health education would then in turn improve patient care (Blake & Harrison, 2013).

Some participants in the current study believed that their own health did not impact on the care and education they provided to patients and that the fact they were not seen as ‘perfect’ would allow patients to feel less threatened and that they understood the same challenges. These beliefs were also reported in other studies, with some believing that if nurses’ own health behaviours were seen as those of a ‘real person’ patients would connect more and that ‘unhealthy nurses’ were able to provide better care as they have a greater capacity to empathize with patients as they suffer the same conditions (Dobinson-Harrington & Comforth, 2006; Eggerton, 2013). With the rising incidence of non-communicable diseases, many researchers are arguing that nurses are crucial as healthy role models and are uniquely placed to support the delivery of government and international health policy (Blake, 2011; Malik, 2011).

For RNs to make a real difference to health outcomes, nurses own health and health education needs to be made a priority that is supported and implemented at multiple points: by policymakers, within nursing practice, within nursing curriculum, and in healthcare institutions (Blake, 2011). The role of nurses providing health education has also been recognised by the WHO that the recently released the *(Global strategic directions for strengthening nursing and midwifery 2016–2020)*, reporting that non-communicable diseases and unhealthy lifestyles are on the rise rather than improving (2016). They have mandated that nursing education and services need to improve and encompass health education, focusing on reducing risk factors and responding to
unhealthy lifestyle choices (WHO, 2016). This global strategic plan gives a framework for interventions at global, regional and national levels. Within in the Australian context, this means that, amongst other strategies, maintaining national accreditation standards for nursing education, clarifying roles and scopes of practice within nursing service, implementing competency-based curricula for educators and student nurses to meet local and national changing health needs, and improving working conditions (WHO, 2016). The profession of nursing in Australia is governed by the NMBA’s RN standards for practice that state that nurses act as good role models of health (2016). Specifically, standard 3 states that RNs are “responsible for providing information and education to enable people to make decisions and take action in relation to their health” (NMBA, 2016. p. 3). Standard 3.1 says the RN “consider and respond in a timely manner to the health and well-being of self and others in relation to capability for practice”. In addition standards 3.2 and 3.7 respectively relate to the provision of “...information and education required to enhance people’s control over health” and “identifies and promotes the integral role of nursing practice and the profession in influencing better health outcomes for people” (NMBA, 2016, p. 4). From the above, we can ascertain that RNs must ensure their own health and values do not impact on their practice. It is also clear that nurses are expected to promote health and provide health education for patients. This research project suggests, however, that this may not be happening on a regular basis.

The findings of this study show that not all participants are succeeding at maintaining their own health and well-being and this is impacting on their educational practice. In fact, as can be seen in the results in chapter four and the summary above, the RNs in this study were worse at adhering to some of the health risk behaviours than the general public. In
order for RNs to be champions of health and wellness within society, and be seen as healthy role models, certain barriers need to be overcome and strategies put into place. Barriers to adherence to health risk behaviours reported in this study were shift work, long working hours and family commitments, these have also been identified in other research studies.

In regards to nurses’ own healthy lifestyles, Shrestha, Pedisic, Neil-Sztramko, Kukkonen-Harjula and Hermans (2016) found there is substantial evidence that shift work increases the risk of obesity (this is echoed in the barriers to healthy behaviours cited by participants in this study), and that overweight and obesity present a financial burden to the workplace through increases in costs associated with absenteeism due to health difficulties and reduced productivity. They propose that workplaces may be driven to conduct interventions to combat obesity in their workers to reduce these impacts. Shift work and lack of time as barriers was also identified in studies by Blake (2011) and Almajwal (2015), with the latter also concluding that nurses who do shift work are at a higher risk of obesity. The current study participants suggested that canteens providing healthy options for staff meals rather than fast food would be one strategy to assist them in adhering to healthy diets. Limited food choices available to shift workers has been found to contribute to obesity in by other researchers also (Eberly & Feldman, 2010; Perry 2014). A feasibility study conducted by Roux et al., 2013 whilst mainly focused on nursing students recommended that nurses, professional organisations and the healthcare system as a whole need to develop strategies for both individual and societal change to enforce healthy work environments. Additional studies are necessary in order to explore whether
the implementation of healthy 24-hour canteens would assist nurses working shift work maintain a healthy diet.

Workplace wellness programs were also suggested strategies from the RN participants to help with motivation and the feeling of support from their organisation. A previous study on the impact of workplace wellness programs on reducing obesity and improving general health by MacDonald and Westover (2011) claimed that corporate wellness programs are an advantage for businesses, both financially and through the health of their employees, and this also has a flow-on effect to society. Thus, workplaces supporting RNs in improving their own health may help to improve the health of others. Given the findings of this research project, RNs want to feel supported by their workplace, and those that had participated in facility wide weightloss challenges voiced feelings of comraderie and a sense of worth during these events. The opportunity to purchase healthy options from the hospital canteen or having the kitchen provide healthy meals on shiftwork for a cost was also discussed to assist RNs in making healthy dietary choices. Other suggestions mentioned by participants were lunchtime walking group, these had been started at some facilities, however were unsuccessful as most nurses did not have enough time during their half hour lunch break. Allowing RNs to take an hour lunch break and work longer so they had time to exercise and eat could be a suggested strategy to increase physical activity. Participants also cited rostering and long working hours as barriers to adhering to health-risk behaviours and wanted input into their rosters so as to organise their work-life better. Being very busy whilst at work and feeling too exhausted at the end of a long shift to find the time to do regular exercise was reported by many participants. These findings are similar to a previous study by Henwood and colleagues (2012) who concluded
that nurses who did not make time to be physically active outside of work had more
difficulty sleeping and higher levels of anxiety, and depression. Whereas, those that met
the national physical activity guidelines had less sick days, and improved overall well-
being (Henwood, Tuckett & Turner, 2012). Of the participants in the current study, only
24% met the national physical activity guidelines which is less than half that of the national
population so this is of concern and warrants further research and urgent strategies such
as those mentioned above.

One such strategy introduced by the government is that of the Western Australian health
promotion strategic framework 2012–2016, which outlined priorities and plans to lower
the prevalence of preventable chronic disease and injury by enabling progress in healthy
behaviours and environments (2012). This framework incorporated the development of
vigorous government and organisational policies, financial interventions, creating
environments for living, working and relaxing that support healthy behaviours and
directed interventions for the public and health professionals. The key areas of focus
mimicked those of this research study: eating for better health; being more physically
active; maintaining a healthy weight; ceasing smoking; and reducing alcohol use (DOH,
Western Australia (WA), 2012). This framework, while not specifically mentioning the
responsibilities for nurses, implies that health professionals have a major responsibility in
the pursuit of health for both themselves and of the community, and that the health
setting is an ideal environment for health education. It proposes that “supporting and
empowering the health workforce in identifying opportunities for …delivering advice on
healthy lifestyle behaviours is a powerful tool for improving public health” (DOH, WA,
2012, p. 34). Thus, supporting the notion that enabling and encouraging RNs to manage
their own health and provide health education to their patients is beneficial and, in fact, paramount.

Some of the strategies and campaigns in WA included nurses as participants, such as: The Healthy Option policy which provided mandatory guidelines for food and drink within health services to improve and maintain the health of staff and patients; the Healthier Workplace program which aimed to motivate and assist workplaces in developing policies, procedures, and a culture that supports healthy behaviours among employees targeting physical activity, healthy eating, responsible alcohol consumption and smoking cessation. None of these programs have been evaluated yet so it is unclear as to the effectiveness of any of these interventions. Nevertheless, providing strategies and support for RNs to adhere to healthy lifestyles may improve their confidence as role models for health. Recently, Queensland Health released their strategic plan for 2016-2020 which also pledges to "promote and influence healthier choices and protective behaviours" including setting performance indicators for an increase in physical activity levels, reduction in smoking and alcohol consumption, and a reduction in the number of Queenslanders who are overweight or obese (QH, 2016). It asserts that the Department will clarify roles and responsibilities and effectively plan and strengthen the workforce. The Health and Well-being Strategy 2015–2020 aims to increase the percentage of Queenslanders who embrace healthy behaviours and reduce unhealthy behaviours (State of Queensland (QH), 2016). There are multiple strategies outlined involving the community and key stakeholders with distinct goals set within the timeframe. The role nursing may play in this strategy is not mentioned in this document which is at odds with the WHO recommendations outlined earlier that the nursing workforce should play a prominent
role in health education. While researchers have argued that nurses have great potential in the areas of health education (Kemppainen, Tossavainen, & Turunen, 2013; Vastani, Karmalani & Petrucka, 2016) this has not been reflected in practice. Keleher and Parker (2013) argue this is not always through lack of motivation, but more the lack of opportunity and the constraints of their work settings and educational preparation; that in fact, nurses were mostly positive about opportunities to expand their role in health education, especially in general practice settings.

Thus there is a discrepancy between various policy recommendations regarding the role of RNs in health education. Furthermore, it is not clear if RNs are aware of current policies and their potential influence on nursing practice. There are many social and health policies, as outlined previously, that nurses can and should base their health education on, however, studies have shown that nurses are not always familiar with these documents and do not apply them to their practice (Kemppainen, Tossavainen & Turunen, 2013; Whitehead, 2011). Many participants in the current study stated they were unaware of the current physical activity recommendations or the alcohol guidelines, therefore had not imparted this information to patients. Nurses are in a prime position to provide health education to patients as collectively they spend more face-to-face time with them than any other health professional. Nurses also make up the majority of the health professional workforce, with 38,259 nurses employed by Queensland Health alone, compared to 9,856 medical staff and 12,084 other health practitioners and professional staff (Queensland Government, 2016). However, without adequate support and health education being made a priority, nurse-led health education is difficult to achieve.
In a mixed method study combining longitudinal data (five years) and primary data collection in NSW hospitals examining nurse staffing, workloads and patient outcomes; teaching patients and families were one of the tasks most frequently reported as undone (Duffield et al., 2011). These results support the findings of this research project in that RNs give clinical tasks more priority than health education. The participants of this study reported inadequate staffing, skill-mix and workloads as well as organisational support as barriers. Another study found that even though community nurses are considered to play a major role in health education, they report similar barriers to implementation to those cited in this study, also urging nurse leaders to take a more active role in policy to lobby for more support and funding (Roden, Jarvis, Campbell-Crofts and Whitehead (2015). In an effort to ease nurses’ workloads to allow them more time to care for patients, QH implemented legislated nurse-patient ratios in 2016. These ratios relate to the minimum number of nurses (RNs and ENs) allocated to patients on a ward per shift; this ratio is 1:4 for morning and afternoon shifts and 1:7 for night shift (QH, 2016). This legislation was not in place during the conduct of this research project and further research would be needed to observe whether RNs still perceive the same barriers as found in this study. However, based on the often-cited barrier of workload constraints, increasing the number of RNs on each shift should decrease workload and improve skill-mix giving them more time to spend providing health education to patients.

Hall et al. (2013) suggest RNs may not feel confident in providing health education, particularly to those patients they feel may be resistant to learning. Two of the subthemes in the findings of this research study were that of ‘not being heard’ and ‘Futility’, participants voiced feelings that patients did not listen when they did try to educate them
and that they were sometimes ‘stuck in their ways’, and very resistant to change. This then led the RNs to feeling that it was futile to even try to educate patients on healthy lifestyles. Self-efficacy is an important part of SCT and does not just relate to an individual’s own behaviours as mentioned earlier but also to their beliefs and confidence in performing certain tasks. In relation to the provision of education in the face of overcoming perceived resistance and other barriers, the term “Teacher efficacy” was coined by Protheroe, (2008) and refers to a teacher’s confidence in their ability to promote learning. Hence, the more confident the RN is in their ability to promote learning and overcome even the most difficult or unmotivated individuals, the more likely they are to continue to persist in giving health education on a regular basis. If they feel their efforts are futile or not being heard and they have low teacher efficacy they are less likely to continue trying. Thus, developing a sense of efficacy in providing health education should be an important consideration for undergraduate nursing curricula.

Participants in this study admitted knowledge was another barrier to giving health education. In fact, some stated they did not know the current guidelines for alcohol consumption and healthy eating and what they did know was based on health promotion from the media. The interviewees mentioned they did not receive specific education on this in their undergraduate degrees. This has been explored in other studies on nursing education. A cross-sectional survey conducted in regional Australia by Kable et al. (2015) found that of 79 nurses, 68% reported they were not educated in their undergraduate degree about providing weight management to overweight or obese patients. More than 70% cited a lack of confidence in providing dietary or physical activity advice to patients who were overweight or obese (Kable et al., 2015). The researchers indicated the
necessity for increased healthy lifestyle education in undergraduate curricula to help address these issues.

Furthermore, Blake and Harrison (2013) implored that nursing education should emphasise the importance of nurses’ own health behaviours to be exemplars for health and support a healthy workforce and population. They also state that nursing education may need to improve so that nursing students understand what constitutes healthy and unhealthy behaviours and they can use this knowledge to guide their own health and that of their patients (Blake & Harrison, 2013). Without knowledge and understanding as what constitutes healthy guidelines, and without the motivation to follow them and then to impart that knowledge confidently to their patients, nurses are unlikely to be able to adhere to their governing standards mandating that they should provide health education to their patients.

An audit into 38 Australian undergraduate nursing courses showed that the nursing curricula has progressively shifted from the 1990s to having a strong emphasis on acute care and skill sets and away from primary health (Keleher, Parker & Francis, 2010). Keleher et al. (2010) discovered that nursing curricula in Australia are greatly lacking with regards to recognising and educating students in health promotion and the role it plays in the health and well-being of the population, or the role nurses need to play in education and prevention interventions. Without health risk behaviours being prioritised in the nursing undergraduate curriculum, it is unreasonable to expect RNs to have the skills and knowledge to feel that they have the efficacy when providing education to patients.

Beaudet, Richard, Gendron, and Boisvert (2011) believe that nursing practice needs to evolve to fully embrace health education if nurses are going to assist in tackling the rising
incidence of non-communicable diseases, but they note that nursing is often more focused on clinical services within the acute setting that rarely incorporates health promotion or prevention into patient care. They attribute this partially to the fact that health education and prevention activities are not amenable to the short-term outcomes generally associated with clinical services and direct care so are afforded less value to organisations for resource allocation (Beaudet et al., 2011). According to participants in this study also, this is a significant barrier to the provision of health education. Participants in this study voiced concerns that the work day did not allow ‘time’ to educate patients on health-risk behaviours and that they were too busy doing clinical tasks that could be checked off. Many participants felt the pressure to ‘turn around’ patients impacted on their ability to provide health education. This pressure and time restraints was also cited as being a barrier to their own health as they skipped meals or chose unhealthy, snacks to keep their energy up. The implementation of the new nurse-patient ratios may improve these time restraints and allow more time with patients.

Another study that had similar findings is an observational study of eight nurses in an acute setting by Casey (2007) where the nurses focused more on getting tasks completed. Casey concluded there was no evidence of a ward culture that valued health education. Casey also suggested that standardised forms had the potential to raise the risk of RNs missing important cues and provision of health education as the focus was on “ticking the boxes” rather than on individual needs (Casey, 2007). Participants in this study also reported that health education was more likely to be given in some areas as there were checklists that needed to be completed before patients could be discharged, however they were concerned that this information was not tailored to the individual and
sometimes given by nurses who obviously were not adhering to their own advice therefore they questioned the extent to which patients took heed or listened. This calls into question the holistic nature of contemporary nursing practice.

In accordance with the findings outlined in this dissertation, Casey (2007) showed that RNs believe they should be role models and that their appearance is important when it comes to patient perceptions of them. Their own health behaviours are also shown to impact on the health education they give to their patients, in that those who smoke are less likely to give education on smoking or place as much value on the need to advise patients on smoking cessation strategies. The same was found for RNs who were overweight or obese—they were less likely to pursue the topic of weight loss. Miller, Alpert and Cross (2008) had similar results with 54% of participants in their study of 760 RNs in the US being overweight or obese and 76% not pursuing the topic of obesity and its risks with patients. Likewise, a systematic review by Zhu, Norman and While (2011) argues that nurses of healthy weight are more inclined than their overweight co-workers to use preventative strategies and provide health education to obese or overweight patients. Given a number of studies that demonstrate that nurses are not adhering to recommended healthy guidelines (Bakhshi et al., 2015; Blake & Harrison, 2013; Miller et al., 2008; Mo, Blake & Batt, 2011), and if health education is to remain a valued part of nursing practice, strategies need to be put in place to assist RNs to adhere to the healthy guidelines so that they are more inclined to provide health education to their patients.

Strategies that need to be considered include seeking a coherent policy position for RNs in regards to health education provision, one that clearly articulates the role of RNs in preventing chronic illnesses in the variety of settings in which RNs work and which is
consistent with other health policies and guidelines internationally through to local institutional levels. The situation where nurses are advocated to have a strong health education role within international policies, where they are expected to fulfil such a role within their practice guidelines but are not provided with the educational preparation, institutional infrastructure or culture in which to fulfil such expectations has to be seen as the context behind the results of this study. The discrepancy between nurses’ own health behaviours and their propensity to provide health education is symptomatic of much broader and deeply ingrained inconsistencies. How such a situation came to be is beyond the scope of this dissertation. What this research has highlighted is that RNs are having to decide for themselves the extent to which they engage in health education within their practice based on their own values, behaviour and circumstances and that this potentially puts them in conflicted positions.

The nursing profession, as a whole, needs to have a discussion as to where it goes from here because there are a number of policy, practice and educational implications associated with the lack of consistency in regards to health education. If health education is to remain a valued part of nursing practice as implied by the WHO guidelines, then tertiary institutions need to pay more attention to teaching nursing students about health education and making nursing students aware of their inherent part as role models for health. If nurses are to play a part in preventative measures in the impending crisis of obesity and non-communicable diseases, they need to reassess and prioritise their day-to-day practice in order to fulfil these expected responsibilities. Nurses are employed in all sectors, not just acute settings and while they need to have a wide range of skills and knowledge, so it may be that greater provision is required within nurse practice standards
for the different settings. These issues need to be resolved at a professional level if we are to see any change in what nurses do and say.

This chapter has discussed the findings in regards to nursing and the inherent responsibilities as laid down by the governing bodies. Recent strategic plans both globally and nationally stress the imperative for health education. RNs are expected, upon coming into the profession, to have a responsibility to be role models for health. The ability to embody this requirement is reliant on multiple factors. While at an individual level, RNs with higher levels of self-efficacy are more likely to adhere to a health risk behaviours and this may then be reflected in their nursing practice, this chapter has outlined a number of broader contextual issues that also need to be considered if nurses are to be effective health educators. Recommendations for future practice, education and research will be discussed in the next chapter.
Chapter 7. Conclusions and Recommendations

It is evident that there has been, and continues to be, a global increase in non-communicable diseases. This has an impact on morbidity, mortality and healthcare costs. Certain health-risk behaviours have been directly related to contributing to these diseases. RNs are in a prime position to assist in educating the people for whom they care regarding these behaviours: they are the health profession with the highest population worldwide; they are among the most trusted professions; and they spend on average the most time with patients. However, there has been a perceived dissonance between what RNs are expected to educate patients on and what they perform in their own lives. This has many implications both for themselves, their patients and the broader profession.

This study explored the prevalence of modifiable health risk behaviours in RNs in the sample region. The mixed methods design investigated the participants’ beliefs as to their role in health education and explored various barriers to both adhering to the healthy behaviours themselves and in providing health education. Participants were also asked to suggest strategies for overcoming these barriers. The results showed that the average age and gender of this cohort were similar to that of Australian nurses and that when compared to the general population, participants smoked less, consumed more alcohol, and met the guidelines for fruit and vegetable consumption more often, although, participants did not exercise enough to be classed as sufficiently active for their health. The majority of participants believed that the role of the RN was highly important in health education, but this did not always equate to the giving of health education to their patients. Several barriers to delivering health education were reported by participants
including lack of time, perceived patient resistance, participants’ own health and not their role.

When explored in greater depth through analysis of the interviews, two themes emerged: role modelling and lack of priority. These themes indicate that RNs, although convinced they should be role models for health, struggle to achieve this and they are acutely aware of patient perceptions of them and their credibility. Teamed with this are the multiple constraints for their time both in the workplace and their personal lives. Those who make the effort to engage in healthy behaviours appear to have more confidence when they do undertake health education with patients; however, they perceive that patients do not always want to be educated and that sometimes it feels as if any efforts to change health behaviours are futile. In an effort to help explain these findings and behaviours, SCT was drawn on in order to explain the findings of the study.

Different policies have recently been introduced from the WHO and the Queensland Government that show a renewed focus on primary health care, health education and targeting the modifiable health risk behaviours included in this study. Therefore, now more than ever, the nursing profession needs to look to how they can best assist in strategies to reduce the incidence of non-communicable diseases. Looking after their own health and well-being by adhering to the recommended guidelines will not only benefit themselves but also those they care for and the wider community. Changes in individual behaviour and practice need to be supported by addressing broader contextual inconsistencies in policy, institutional infrastructure and educational preparation. The strengths and limitations of this study will be discussed next followed by
recommendations for further research and recommendations for policy, curriculum and practice.

7.1 Strengths and Limitations of the Study

To date, no study has explored the prevalence of all four health risk behaviours and the influence of the presence of these on health education in regional Australian RNs. This study is also unique in that it offered the participants the opportunity to suggest their own strategies to both adherence to healthy lifestyles and the provision of health education rather than the researcher only suggesting strategies. This study was conducted with participants from a single regional area and this limits the generalisability of the findings to some extent. Greater diversity of participants from a wider geographical area would have broadened the understanding of these issues. Other limitations were the study did not include patient perceptions or specific questions are self-efficacy. Although the sample size for phase one was quite large, the small amount of participants that had undertaken further training meant some analyses could not be undertaken.

In light of these findings, there are implications for policymakers, the nursing accreditation board, tertiary institutions and healthcare facilities.

7.2 Recommendations for Further Research

This study, while able to determine the prevalence of the selected risk factors in the current participants and identify some barriers to RNs adherence to healthy lifestyles, was unable to confirm strategies that could overcome these barriers. Future research into barriers and enablers to healthy lifestyles in RNs on a nationwide scale are needed. A correlation between the presence of two or more risk factors and not giving regular health education in this cohort was found, however, a much larger cohort would give more
generalisability to the results. Further research also needs to be done incorporating strategies to assist nurses to adhere to the recommended guidelines and increase self-efficacy.

7.3 Recommendations for Policy, Curriculum and Practice

Policymakers need to abide by the directions outlined by the WHO strategic directions (2016) when deciding on staffing, resources, curriculum and professional development. Whilst some improvements have been made recently and there has been a push in 2016 to increase strategies for healthy workplaces the success of these is yet to be seen. The new nurse-patient ratios will hopefully have a positive impact on staffing and resources.

Higher education institutions need to recognise the need to adhere to the recent policies and frameworks that call for curriculum change around health-risk behaviours and health education. Higher education institutions also need to give more priority to educating students on health-risk behaviours and recommended guidelines whilst encouraging them to transfer this knowledge to their personal lifestyle behaviours and become health champions. Health education needs to be prioritised, specifically around the key risk factors that contribute to non-communicable diseases in undergraduate curriculums.

To allow RNs time to provide health education to patients, healthcare facilities may need to look at increasing staffing and reducing workloads. Healthcare facilities need to provide strategies to enable RNs to observe healthier lifestyles and be role models for health. Encouraging RNs to have input into these strategies will also potentially increase engagement and self-efficacy to achieve their health goals. Structured in-house training and education for all nurses should be implemented in relation to the key health-risk
behaviours, again increasing nurses’ confidence and self-efficacy to provide education and support to patients.

In summary, this study has found that many RNs are not adequately adhering to recommended guidelines around health-risk behaviours. With the epidemic facing the population of increasing non-communicable diseases world-wide, something more needs to be done. Nurses are ideally situated to play a greater part in being health champions and role models, providing education and support to patients confidently and credibly. There are many individual and societal barriers that need to be navigated to achieve this. This study has also found that registered nurses health-risk behaviours strongly influence attitudes and education provision, therefore improving their perceived self-efficacy may be a successful strategy.
References


AIHW. (2012). *Risk factors contributing to chronic disease* (Cat No. PHE 157). Canberra: AIHW.


http://www.nursingmidwiferyboard.gov.au

http://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-
Statements/Professional-standards.aspx

Retrieved from: http://www.cdc.gov/nchs/data/hestat/obesity_adult_07_08/
obesity_adult_07_08.htm#table1


*Chronobiology International: The Journal of Biological and Medical Rhythm Research, 31*(10), 1152–1159.


Appendix A: Invitation Posted to Social Media Sites to Participate in Phase One

Can you spare a few moments to take my survey?

Hi,

All registered Nurses living in the Bundaberg region please take my survey and share it with others. It is part of a Masters study and totally anonymous. Also if you know of other registered nurses who are not on Facebook please share the following link via email with them. https://www.surveymonkey.com
Appendix B: Healthy Behaviours survey Information and Consent

Project Title: “Do as I say not as I do?” - Analysing nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community.

Please read the following information carefully. Your decision to continue with this survey will be considered as having provided informed consent. You must be at least 18 years of age, and a Registered Nurse living in the Bundaberg region to participate in this research project.

I agree to participate in a research study about registered nurses healthy lifestyle behaviours, what influences these behaviours and how they impact on my role in health education.

You will be asked to complete a brief online questionnaire which will take approximately 10 minutes of your time. Your responses will be entirely confidential and anonymous and no identifying information will be collected. You will be entirely unidentifiable after submitting your responses, so please be honest in your replies. You are also free to withdraw from the study at any time. To do so, simply close the browser window.

The research findings will be included in the researcher’s publication(s) on the project and this may include conference presentations and research articles as well as a summary posted via link to Facebook. In the event that you experience any discomfort due to completing this questionnaire, please do not hesitate to contact one of the following services:

**Life Line phone counselling**

ph: 13 11 14
Beyond Blue depression and anxiety initiative  
ph: 1300 22 46 36  
Headspace (if you are between 12 and 25 years old)  
ph: 1800 650 890  
e-counselling: https://www.eheadspace.org.au  
Or alternatively, please contact CQUniversity’s Office of Research (ph: 07 4923 2603, email: ethics@cqu.edu.au) should there be any concerns about the nature and/or conduct of this research project.

If you have read and understood the above information, please ensure that you select the ‘I understand the above information’ option at the bottom of this page.

Your contribution to this research project is greatly appreciated.

Penny Heidke

__________________________________________

Researcher
## Appendix C: Survey Questions

### General Demographics

<table>
<thead>
<tr>
<th>Q1</th>
<th>How old are you?</th>
<th>Enter age</th>
<th>Go to Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>What is your sex?</td>
<td>Male</td>
<td>Go to Q3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>How many years have you been a RN?</td>
<td>Enter years</td>
<td>Go to Q4</td>
</tr>
<tr>
<td>Q4</td>
<td>Are you now employed full-time, part-time, not employed, or retired?</td>
<td>full-time</td>
<td>Go to Q5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part-time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>casual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>not employed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>retired</td>
<td></td>
</tr>
<tr>
<td>Q5</td>
<td>What is your marital status?</td>
<td>single/never been married</td>
<td>Go to Q6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>married</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>separated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>divorced</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>widowed</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Training

| Q6 | Have you had any extra training regarding in any of the following? 
    | More than one response allowed. | 1. Smoking Cessation | If any circled Go to Q7 |
|    |                                 | 2. Weight management  | If not skip to Q8 |
|    |                                 | 3. Healthy eating     |                     |
|    |                                 | 4. Alcohol issues     |                     |
|    |                                 | 5. Physical activity  |                     |

| Q7 | With regards to any extra training in the above areas, to which level was it certified? 
    | More than one response allowed. | 1. Workshop | Go to Q8 |
|    |                                 | 2. Short course    |            |
|    |                                 | 3. Graduate Certificate |       |
|    |                                 | 4. Graduate Diploma |             |
|    |                                 | 5. Masters         |             |
|    |                                 | 6. PhD             |             |
### Self-reported Health

| Q8 | In general would you say that your health is excellent, very good, good, fair or poor? | 1. Excellent  
2. Very good  
3. Good  
4. Fair  
5. Poor | Go to Q9 |

#### Certain health risk factors are modifiable by the individual, such as diet, smoking, physical activity and alcohol consumption.

I would now like to ask you some questions about your weight.

| Q9 | Do you consider yourself to be a healthy weight, underweight or overweight? | Healthy weight  
Underweight  
Overweight  
Currently pregnant | Go to Q10  
(goto Q12) |

| Q10 | What is your height in cm? | Height in cms | Go to Q11 |

| Q11 | What is your weight in kgs? | Weight in kgs | Go to Q12 |

| Q12 | Has your weight increased, decreased or stayed the same since this time last year? | 1. Increased  
2. Decreased  
3. Stayed about the same | Go to Q13 |

### Physical Activity

The next few questions are about physical activity. I would like to ask you about the physical activity you did IN THE LAST WEEK:

| Q13 | In the last week how many times have you walked, for at least 10 minutes continuously, for fitness, recreation or sport or to get to or from places? | Specify number of times | Go to Q14 |

| Q14 | What do you estimate was the total time that you spent walking in this way IN THE LAST WEEK? | Specify time in HOURS & MINUTES | Go to Q15 |

| Q15 | How many of these walks that lasted at least 10 minutes were specifically to get to or from places rather than for recreation or exercise? | Specify number of times | If 0 go to Q 17  
If >0 to Q16 |
<table>
<thead>
<tr>
<th>Question</th>
<th>Text</th>
<th>Response 1</th>
<th>Response 2</th>
<th>Response 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16</td>
<td>And what do you estimate was the total time you spent walking this way <strong>IN THE LAST WEEK</strong>?</td>
<td>Specify time in HOURS &amp; MINUTES</td>
<td>Don't know</td>
<td>Go to Q17</td>
</tr>
<tr>
<td>Q17</td>
<td><strong>IN THE LAST WEEK</strong>, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (E.g. jogging, cycling, aerobics, competitive tennis)?</td>
<td>Specify number of times</td>
<td>If 0 go to Q 19</td>
<td>If &lt;0 go to Q18</td>
</tr>
<tr>
<td>Q18</td>
<td>What do you estimate was the total time that you spent doing this vigorous physical activity <strong>IN THE LAST WEEK</strong>?</td>
<td>Specify time in HOURS &amp; MINUTES</td>
<td>Don't know</td>
<td>Go to Q 19</td>
</tr>
<tr>
<td>Q19</td>
<td><strong>IN THE LAST WEEK</strong>, how many times did you do any other more moderate physical activity that you haven't already mentioned? (E.g. gentle swimming, social tennis, golf, lawn bowls)</td>
<td>Specify number of times</td>
<td>If 0 go to Q 21</td>
<td>If &lt;0 go to Q20</td>
</tr>
<tr>
<td>Q20</td>
<td>What do you estimate was the total time that you spent doing these activities <strong>IN THE LAST WEEK</strong>?</td>
<td>Specify time in HOURS &amp; MINUTES</td>
<td>Don't know</td>
<td>Go to Q21</td>
</tr>
<tr>
<td>Q21</td>
<td>Thinking about all the types of exercise you have already told me about, that is walking vigorous and moderate exercise, how many days in the last week did you exercise?</td>
<td>Enter days up to 7</td>
<td>Go to Q22</td>
<td></td>
</tr>
<tr>
<td>Q22</td>
<td>How many of these days did you exercise for at least 30 minutes per day?</td>
<td>0-7</td>
<td>Go to Q23</td>
<td></td>
</tr>
</tbody>
</table>

**Smoking**

I would now like to ask you some questions about smoking.

<table>
<thead>
<tr>
<th>Question</th>
<th>Text</th>
<th>Response 1</th>
<th>Response 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q23</td>
<td>Do you currently smoke?</td>
<td>Yes</td>
<td>Go to Q24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Go to Q 26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>Go to Q30</td>
</tr>
<tr>
<td>Q24</td>
<td>Do you smoke regularly, that is, at least once a day?</td>
<td>No</td>
<td>Go to Q 25</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>Q25</td>
<td>Do you smoke at least once a week?</td>
<td>Yes</td>
<td>Go to Q 26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Go to Q 26</td>
</tr>
<tr>
<td>Q26</td>
<td>Have you ever smoked regularly, that is, at least once a day?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Q27</td>
<td>Have you smoked at least 100 cigarettes in your entire life?</td>
<td>Yes</td>
<td>Go to Q 29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Go to Q 28</td>
</tr>
<tr>
<td>Q28</td>
<td>Have you ever smoked pipes, cigars, or other tobacco products at least 20 times in your entire life?</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Q29</td>
<td>Did you stop smoking regularly, that is at least once a day, within the last 12 months?</td>
<td>Yes</td>
<td>Go to Q 31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Q30</td>
<td>Do you smoke more than 10 cigarettes per day?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Nutrition

The next few questions are about some of the foods that you eat and drink.
This question is about your usual consumption of vegetables, including fresh, frozen and tinned vegetables.
<table>
<thead>
<tr>
<th>Q31</th>
<th>How many serves of vegetables do you usually eat each day?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1 serve</td>
<td></td>
</tr>
<tr>
<td>2. 2 serves</td>
<td></td>
</tr>
<tr>
<td>3. 3 serves</td>
<td></td>
</tr>
<tr>
<td>4. 4 serves</td>
<td></td>
</tr>
<tr>
<td>5. 5 serves</td>
<td></td>
</tr>
<tr>
<td>6. 6 serves or more</td>
<td></td>
</tr>
<tr>
<td>7. Less than one serve</td>
<td></td>
</tr>
<tr>
<td>8. Don’t eat vegetables</td>
<td></td>
</tr>
</tbody>
</table>

Go to Q32

<table>
<thead>
<tr>
<th>Q32</th>
<th>Since this time last year, has the amount of vegetables you usually consume, increased, decreased or stayed about the same?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increased</td>
<td></td>
</tr>
<tr>
<td>2. Decreased</td>
<td></td>
</tr>
<tr>
<td>3. Stayed about the same</td>
<td></td>
</tr>
</tbody>
</table>

Go to Q33

This question is about your usual consumption of fruit, including fresh, dried, frozen and tinned fruit.

**Fruit - examples of serving size**

1 medium piece (e.g. apple) = 2 small pieces (e.g. apricots) = 1 cup chopped or canned fruit

<table>
<thead>
<tr>
<th>Q33</th>
<th>How many serves of fruit do you usually eat each day?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1 serve</td>
<td></td>
</tr>
<tr>
<td>2. 2 serves</td>
<td></td>
</tr>
<tr>
<td>3. 3 serves</td>
<td></td>
</tr>
<tr>
<td>4. 4 serves</td>
<td></td>
</tr>
<tr>
<td>5. 5 serves</td>
<td></td>
</tr>
<tr>
<td>6. 6 serves or more</td>
<td></td>
</tr>
<tr>
<td>7. Less than one serve</td>
<td></td>
</tr>
<tr>
<td>8. Don’t eat fruit</td>
<td></td>
</tr>
</tbody>
</table>

Go to Q35
Q34 | Since this time last year, has the amount of fruit you usually consume increased, decreased or stayed about the same? | 1. Increased  
2. Decreased  
3. Stayed about the same

Alcohol

The next few questions are about alcoholic drinks.

Some people may drink more or less than others, depending on their lifestyle and individual choices.

Q35 | Have you had an alcoholic drink of any kind in the last 12 months? | Yes | Go to Q36  
No | Go to end

Q36 | In the last 12 months, how often do you have an alcoholic drink of any kind? Would that be ... | 1. Every day  
2. 5 to 6 days a week  
3. 3 to 4 days a week  
4. 1 to 2 days a week  
5. 2 to 3 days a month  
6. About 1 day a month  
7. Less often than 1 day a month; or  
8. Do you no longer drink  
9. Don't know | Go to Q37  
Go to Q38

The next questions are about the number of standard drinks that you have had in the last 12 months. It starts at very high consumption and goes down to very low consumption.

This card shows the standard drink guide.
<table>
<thead>
<tr>
<th>Q37</th>
<th>In the last 12 months, how often have you had 11 or more standard drinks in a day?</th>
<th>Enter number of times per week/in last 12 months.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q38</td>
<td>In the last 12 months, how often have you had 7 or more standard drinks in a day?</td>
<td>Enter number of times per week/in last 12 months.</td>
</tr>
<tr>
<td>Q39</td>
<td>In the last 12 months, how often have you had 5 or more standard drinks in a day?</td>
<td>Enter number of times per week/in last 12 months.</td>
</tr>
<tr>
<td>Q40</td>
<td>In the last 12 months, how often have you had 3 or more standard drinks in a day?</td>
<td>Enter number of times per week/in last 12 months.</td>
</tr>
</tbody>
</table>
| Q41  | Has the amount of alcohol that you usually drink increased, decreased or stayed about the same since this time last year? | 1. Increased  
2. Decreased  
3. Stayed about the same | Go to Q42 |

**Barriers**

| Q42  | How important do you believe the role of the Registered Nurse is in Health Education? | 1. Extremely important  
2. Very important  
3. Moderately important  
4. Slightly important  
5. Not important | Go to Q43 |
| Q43 | Do you give regular advice on any of the following topics to your patients? *More than one response allowed.* | 1. Reducing or quitting smoking  
2. Drinking alcohol in moderation  
3. Reaching a healthy weight  
4. Increasing physical activity  
5. Eating healthy food or improving diet  | Go to Q44 |
| Q44 | What barriers (if any) do you perceive there are to delivering this advice? | Open format |
| Q45 | Time is frequently identified as a barrier. To what extent is lack of time prohibiting you from giving health education? | 1. Always  
2. Mostly  
3. Sometimes  
4. Rarely  
5. Never |
| Q46 | Knowledge is frequently identified as a barrier. To what extent is lack of knowledge of healthy lifestyles prohibiting you from giving health education? | 1. Always  
2. Mostly  
3. Sometimes  
4. Rarely  
5. Never |
| Q47 | What barriers do you believe RNs face in adopting and maintaining healthy behaviours? | Open answer |
| Q48 | What strategies can you suggest to overcome these barriers? | Open answer |
| Q49 | Do you believe that nurses who engage in unhealthy behaviours are less likely to counsel their patients on these behaviours? | 1. Yes  
2. No |
Appendix D: Recruitment Notice

Recruitment Notice

Research participants wanted

Participants are needed for a research project that seeks to analyse registered nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community. A willingness to undertake a private face-to-face interview in which you share your perceptions as to what extent your own lifestyle impacts on the health advice you give to the people you care for, as well any enabling/disabling factors to undertaking health education on a regular basis is required. It is anticipated that each interview will last 30–60 minutes. Interviews will be held at a time and location mutually agreeable to participants and researcher.

The research is being completed as a Master of Health Science (Research) at Central Queensland University. This research has been approved by Central Queensland University Human Research Ethics Committee–approval number: PROJECT H15/04-054

If you are an Australian registered nurse, and would like to participate in this research, or would like further information, please contact:

_________________________________

Penny Heidke
Phone: 54407019
Email: p.heidke@cqu.edu.au

Your input into this study would be greatly appreciated
Appendix E: Introductory Letter

Introductory letter

Date

Dear ...

Thank you for expressing an interest in my research project titled: “Do as I say not as I do?” Analysing nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community.

Please find attached an information sheet that provides further information about the research and a consent form. If after reading the information sheet, you are willing to participate in the study please complete the consent form and return in the pre-paid envelope. When this has been received I will make contact to arrange an interview.

If you have any questions, please do not hesitate to contact me.

Yours sincerely

Penny Heidke

Ph: 0754407019

p.heidke@cqu.edu.au
Appendix F: Information Sheet

Information Sheet

**Project Title:** “Do as I say not as I do?”—Analysing nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community.

**Researcher:** Ms Penny Heidke  
**Supervisors:** Dr Wendy Madsen & Erika Langham

The purpose of this research is to analyse registered nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community. Participation is open to anyone who is working as a registered nurse. This includes participants who work full time, part time, or are casually employed as a registered nurse.

As a participant in this research, you will be asked to take part in an interview where you will be asked about your perceptions of health education in your work setting; the role nurses play in promoting healthy lifestyles to the community, and any factors that may impact on this role. The interview will be conducted face-to-face, between you and the researcher in a mutually agreed private location. It is anticipated that the interview will take approximately 30 to 60 minutes. The interview will be held at a time convenient to you.

The interview will be digitally recorded, to be later transcribed verbatim. A copy of this transcript will be provided to you for checking. Recording of the interview is to assist the researcher in having an accurate account of your experience for analysis.

During research projects where personal information is being discussed, issues can arise that may be confronting or upsetting to participants. The following contacts are provided in the event that you need further support:

- Lifeline Australia: 13 11 44 www.lifeline.org.au
- Beyond blue: 1300 22 4636 www.beyondblue.org.au

Every attempt will be made to safeguard your privacy. Your name and any identifying information will not appear on any of the transcripts, thesis or other publications. The consent form and any other identifying information and research data will be stored for 7 years in a secure and locked location, in accordance with Central Queensland University’s Code of Conduct for Research Policy.

The research finding will be included in the researcher’s Master of Health Science (Research) thesis, and may also be included in journal articles, conferences, and any other publications that may result from the research.

You are free to withdraw from the research at any time up to the point of data analysis with no explanation, and without prejudice or consequences as a result of your withdrawal. Any information you gave prior to withdrawal will be omitted from the study.

I am happy to discuss any concerns you may have about how this study will be conducted. I can be contacted on (07) 54407019 by emailing p.heidke@cqu.edu.au.

Should there be any concerns about the nature and/or conduct of this research project please contact:

Office of Research  
Building 361, Rm G.01  
Central Queensland Innovation and Research Precinct (CQIRP).  
CQUniversity  
Ibis Avenue  
Nth Rockhampton Qld 4701

Phone: (07) 4923 2607

Email: research-enquiries@cqu.edu.au
Appendix G: Consent Form

CONSENT FORM

Investigator: Penny Heidke
Address: CQUniversity Noosa
          PO Box 1128
          Noosaville QLD
          Australia
Telephone: 07 54407019

Project Title: “Do as I say not as I do?”- Analysing nurses own adherence to the healthy lifestyles they are expected to promote to patients and the community.

I, ..........................................................................................................................
Of (Address/Email) ............................................................................................

agree to participate in a research study explained to me by the researcher about registered nurses healthy lifestyle behaviours, what influences these behaviours and how they impact on my role in health promotion. I understand that I am to participate in an interview as an individual and that the interviews will be digitally recorded. I acknowledge that my privacy will be protected and confidentiality of the data ensured.

I understand that

• any information that I provide will not be made public in any form that could reveal my identity to an outside party;
• I am free to withdraw my consent at any time during the study without penalty or prejudice and any information I have given during the interview will be omitted from the study;
• I have had the opportunity to discuss this study and I am satisfied with the answers I have been given;
• I know who to contact if I have any questions about the study;
• I am able to access support and counselling provided by the researcher if needed.

If you have any concerns about the way in which this research has been conducted please contact Ethics committee at Central Queensland University, phone 07 4930 9777.

Date: .......................................................... ..........................................................

..........................................................

Signature of participant
Appendix H: Interview Questions

Interview questions

1. Please tell me about your work setting and the sorts of patients you interact with on a daily basis?

2. How does health education happen in this setting? (Prompts – describe a particular session, best opportunities, under what circumstances)

3. Explain to me the value that you place on health education within your work?

4. What is it about your practice and your personal behaviours and beliefs that allow you to undertake health education on a regular basis?

5. How do you think the way you present to patients influences the health education you provide? (Patient perception)