Opportunity for Australian Community Pharmacists to Health Coach

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy.

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DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

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ABBREVIATIONS

AC	The Association for Coaching
ANZCTR	Australia New Zealand Clinical Trials Registry
ARMS	Adherence to Refills and Medications Scale
AUS	Australia
BP	Blood Pressure
CAD	Coronary Artery Disease
CAN	Canada
CAPICHe	Costs to Australian Private Insurance – Coaching Health
C-Cg	Calgary-Cambridge guide
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
DAI-30	Drug Attitude Inventory Score
EMCC	The European Mentoring and Coaching Council
GHBC-CF	The Generic Health Behaviour Change Competency Framework
GP	General Practitioner
HAPA	Health Action Process Approach
HbA1c	Glycated Haemoglobin
HDL	High-Density Lipoprotein
HREC	Human Research Ethics Committee
HRQoL	Health-Related Quality of Life
ICF	The International Coaching Federation
IMB	Information- Motivation- Behavioural-Skills Model
LDL	Low-Density Lipoprotein
MI	Motivational Interviewing
NBHWC	The National Board for Health and Wellness Coaching
NONPF	National Organisation of Nurse Practitioner Faculties

NSHC	National Society of Health Coaches
NZ	New Zealand
PaCT	Patient-Centred Communication Tools
PPDC	Pharmacy Practitioner Development Committee
PDC	Proportion of Days Covered
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RMIT	Royal Melbourne Institute of Technology
SCT	Social Cognitive Theory
SDT	Self Determination Theory
SLT	Social Learning Theory
SMS	Short Message Service
SOC	Stages of Change
TPB	Theory of Planned Behaviour
TTM	Transtheoretical Model of Change
UK	United Kingdom
USA	The United States of America

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ABSTRACT

Background: The role of pharmacists is expanding beyond traditional dispensing duties. Pharmacist health coaching involves facilitating positive behaviour change; internationally, the service has produced favourable outcomes in patients with chronic health conditions. However, the provision of the service by Australian community pharmacists has not been reported.

Across the community, there appears to be a lack of a clear understanding of what health coaching encompasses. Furthermore, the lack of a comprehensive competency framework means that there is no clear understanding by health professionals, and indeed researchers, of the skills and behaviours required with respect to undertaking health coaching.

Internationally, although health coaching studies have investigated and reported the quantitative outcomes of pharmacist health coaching to date there is no qualitative data that supports the role of pharmacists as health coaches. Hence, there is a need to expand on the existing knowledge base regarding pharmacist health coaching.

Objectives: To build an evidence-based comprehensive foundation about health coaching upon which a pilot Australian health coaching trial in community pharmacy could be designed, and implemented, and to evaluate the outcomes of a pilot pharmacist health coaching program qualitatively and quantitatively in Australia.

Methods: A systematic review was conducted to identify sources related to pharmacy health coaching to extract the definitions of health coaching. The recurring terms/themes within the definitions of health coaching were noted in formulating a grounded definition (Chapter 2). Subsequently, a systematic review was carried out using the grounded definition to identify peer-reviewed papers referring to the competencies of health professionals engaged in health coaching (Chapter 3). Thereafter, a qualitative study compared the enabling competencies of health coaches against the competency frameworks of pharmacists from Australia (AUS), Canada (CAN), New Zealand (NZ), the United Kingdom (UK), and the United States of America (USA) (Chapter 4). The foundation and behaviour change competencies within each of the competency domains in the generic health behaviour change competency framework

(GHBC-CF), which provides a framework of competences at three different intervention levels- low, medium, and high was then mapped to the Australian pharmacist competency framework (Chapter 5). An additional systematic review was conducted engaging the grounded definition to evaluate sources referring to the modalities of pharmacist health coaching providing the greatest improvement in patient outcomes (Chapter 6). Semi-structured interviews with leaders in the pharmacy profession were carried out to qualitatively evaluate their opinions and attitudes towards health coaching in Australian community pharmacies (Chapter 7).

The outcomes of this work provided the foundation to undertake a pilot community pharmacy-based health coaching study. Pharmacists provided three health coaching sessions to 20 participants with poorly controlled hypertension at monthly intervals. Changes in participants' blood pressure, medication adherence, and the stages of change (SOC) with respect to the modifiable health behaviours; diet, exercise, and medication management were assessed (Chapter 8). The beliefs, opinions, attitudes, and experiences that participants who receive health coaching have towards the service were thematically analysed at baseline and post-study as were the views of the pharmacist health coaches (Chapter 9).

Results: A grounded definition of health coaching was established (Chapter 2), as were nine key competencies of health professionals engaged in health coaching (Chapter 3). The competency frameworks for pharmacists from countries in which health coaching interventions have been successfully implemented underpinned the competencies previously identified as being required to health coach. However, the health coaching competency "demonstrates confidence" appeared to be absent in the competency frameworks for pharmacists from AUS, CAN, and NZ (Chapter 4). Examining the competencies Australian pharmacists required in more detail, further mapping indicated that basic behaviour change interventions were within the scope, but knowledge and skills for intensive behaviour change interventions such as health coaching needed to be further developed (Chapter 5). The modalities used by these pharmacists to health coach included face-to-face, telephone, or a combination of approaches. In each instance, coaching led to improvements in the patient's clinical and non-clinical health outcomes and identification of the most pragmatic health coaching approach was

not possible (Chapter 6). Stakeholders identified key barriers and facilitators to implementing health coaching into the Australian community pharmacy such as lack of pharmacist knowledge and improved management of chronic disease, respectively (Chapter 7). The outcomes of a pilot health coaching study in the community pharmacy showed reductions in blood pressure in participants with poorly controlled hypertension and positive changes to their SOC and health behaviours (Chapter 8). The beliefs, opinions, attitudes, and experiences of participants also changed because of pharmacist health coaching. While interviews with the pharmacists revealed several factors relating to the implementation and provision of health coaching into Australian community pharmacy practice (Chapter 9).

Conclusion: A comprehensive study that examined several different aspects of pharmacist health coaching formed the framework for a pilot health coaching study in an Australian community pharmacy. Quantitative analysis of the study outcomes revealed improvements to participant blood pressure as well as their health behaviours. Interviews with pharmacist health coaches showed several factors that would need to be carefully considered if health coaching were to be implemented into community pharmacy practice nationally, these elements were analogous to those identified by key stakeholders in the industry.

This pilot demonstrates the potential for Australian pharmacists to provide health coaching. The work also identifies additional training is required to upgrade pharmacists' knowledge and skills to enable them to provide this service.

CHAPTER 1

Introduction

Chapter overview

This research aims to develop insight into the concept of health coaching as a service within Australian community pharmacies. This chapter includes a brief introduction to the burden of chronic health conditions in Australia and the role of professional pharmacy services used for the management of chronic health conditions. Health coaching as a service provided by community pharmacists and its potential contribution to the management of chronic health conditions is then discussed. The application of current competency frameworks with regards to the evolving role of pharmacists as health coaches is also considered. The background to the research study is then followed by a brief outline of my role as a researcher and pharmacist, as well as the purpose of the study. This section concludes with an overview of each chapter of the thesis.

1.1. The Burden of Chronic Health Conditions in Australia

It is expected that by 2051, the proportion of Australian's over the age of 65 years will be greater than 6.5 million, with the most significant increase for those aged 80 years and older (Australian Bureau of Statistics, 2005). Concomitantly, accompanying the rise in Australia's ageing population is the rise in the number of individuals enduring chronic health conditions; the leading cause of premature morbidity and mortality in those aged 65 years and over (Australian Bureau of Statistics, 2005; Caughey et al., 2008).

Chronic health conditions are health conditions that are prolonged, and although manageable are incapable of being cured. These health conditions are often complex and require ongoing monitoring. Consequently, they can have a considerable effect on the individual, their families, and carers (Dowrick et al., 2005). Furthermore, the rise in chronic health conditions has significant implications for health care services and its costs to the health care infrastructure; in 2000 to 2001 chronic diseases accounted for almost 70% of all health infrastructure costs in Australia (over $AU 35 billion) (Dowrick, 2006). Though, if recognised and managed early, the health implications, and costs associated with, chronic health conditions can be enhanced and sustained long-term (Song et al., 2020).

It is estimated that almost 50% of Australians have at least one of the common chronic health conditions, which include: cancer, cardiovascular disease (CVD), mental health conditions, arthritis, back pain and problems, chronic obstructive pulmonary disease, asthma, and diabetes (Statistics, 2019). Individuals diagnosed with these chronic health conditions have difficulties managing their health, as they lack knowledge about the condition and its self-management (Jerant et al., 2005). Considering the persistent, variable, and often degenerative nature of chronic health conditions this can lead to complications (Jordan et al., 2008). Therefore, active participation by patients coupled with regular follow-up with a health professional is paramount in the effective and long-term management of chronic health conditions.

1.2. Managing Chronic Health Conditions in the Community Pharmacy

Pharmacists are at the frontline of the healthcare system, they are highly accessible health care professionals, and are conveniently available to patients without the need for an appointment or booking. However, in Australian community pharmacies at present, there is little pharmacist involvement and engagement towards the provision of professional pharmacy services as the core community functions continue to be dispensing prescription medicines (Hattingh et al., 2020; Mak et al., 2012). Professional pharmacy services are defined as interventions in which pharmacists use their breadth of knowledge and skills to take actively promote patient health through effective interaction with both patients and or primary health care professionals (Feletto et al., 2010).

The introduction of pharmacy professional services has previously encouraged pharmacists to utilise the knowledge and skills learned through formal tertiary education and training (Roberts et al., 2005; Spencer & Edwards, 1992). More importantly, these services have contributed to the improvement of a patient's health and wellbeing (Roberts et al., 2005). Pharmacists have described this as the most rewarding aspect of their job (Mak et al., 2012). However, in recent times, pharmacists have reported a decline in fulfilment from their jobs, and as such, pharmacists are increasingly moving away from the shop-front roles. This has been attributed to a downturn in the recognition of their extensive training, knowledge, and skills by the community and other health professionals (Mak et al., 2013; Roberts et al., 2006).

Several strategies have been suggested to facilitate awareness about pharmacists' extended role within the community through the provision of professional pharmacy services (Roberts et al., 2006). Implementation of these services within the community pharmacy has demonstrated clinical efficacy and a way to improve patient-centred care; of particular importance when managing chronic health conditions (Department of Health & The Pharmacy Guild of Australia, 2015). However, most of the services lack continuity in care and follow-up, as they have been designed as once-off interventions (Department of Health & The Pharmacy Guild of Australia, 2015), whereby the pharmacist and patient are not committed to follow-up interventions. Although this scenario can work for patients with acute

health conditions, it is inappropriate for patients with chronic health conditions, which require regular monitoring. Furthermore, the current professional pharmacy services do not take a holistic approach; for chronic health conditions, this is paramount as they are often complicated by a combination of factors, such as medication adherence, diet, and lifestyle (Lau et al., 2010).

1.3. Health Coaching

Research has shown that optimising lifestyle health and behaviours can have a significant effect on the protection against and management of chronic health conditions (Bauer et al., 2014; Palmer et al., 2003). Health coaching is an emerging intervention, assisting patients to modify their health behaviours (Neuner-Jehle et al., 2013; Olsen & Nesbitt, 2010; Palmer et al., 2003).

Although the concept of coaching is well known and documented in the sporting arena, it can be traced back to the 1800s during which time 'coaching' referred to a tutor who prepared students for examinations (Carter, 2010; Lyle, 2005). The underlying frameworks and theories of successful coaching strategies have since been well studied and documented within the discipline of psychology. This has influenced the progress of coaching into various forms to improve an individual's performance across a vast scope of endeavours; these include a life skills coach, personal coach, business coach, and health coach to mention a few (Palmer et al., 2003).

As with conventional coaching, health coaching involves being guided to achieve a goal, through a behaviour change, though the goals are health-oriented (Olsen & Nesbitt, 2010). Health coaching has recently gained attention within the pharmacy profession, in particular, to assist patients with medication adherence, health education, prevention, and management of chronic health conditions (Lonie et al., 2017).

1.3.1. Underlying Theories

The underlying models and theories of health coaching have been derived from psychology (Lonie et al., 2017). Numerous models and theories form the rationale of behavioural change in coaching. Those most commonly mentioned in the literature include the Transtheoretical Model of Change (TTM), Self

Determination Theory (SDT), the Theory of Planned Behaviour (TPB), Health Action Process Approach (HAPA), the Information-Motivation-Behavioural-Skills Model (IMB), the Social Learning Theory (SLT) and the Social Cognitive Theory (SCT). The theories are distinct from one another. However, coaching acknowledges that individuals intrinsically learn in various ways, and thus the techniques of health coaching may involve the integration of a single or a integration of models or theories which may complement one another (Lonie et al., 2017).

The Transtheoretical Model of Change is also referred to as the stages of change (SOC) approach, as it involves five stages of change; pre-contemplation, contemplation, preparation, action, and maintenance (Shearer et al., 2003). Each stage incorporates multiple principles and theories of change; hence the name *Transtheoretical*. At each stage of this model, individuals are motivated by the coach and encouraged to recognise their internal readiness to change. As such, this model of change is appropriate for individuals with the absence of an internalised motivation to change (Shearer et al., 2003).

Conversely, the Self Determination Theory (SDT) is best applied to individuals motivated towards a behavioural change as it recognises an individual's intrinsic motivation. The theory suggests that by supporting an individual's intrinsic motivation they will behave in a healthy way, whilst an individual that is amotivated will be unlikely to behave healthily (Orsini et al., 2016).

The Theory of Planned Behaviour (TPB) is also focused on an individuals' internal behaviours but is affected by social norms and attitudes in which can consequently impact the outcomes of a health coaching intervention (Ajzen, 1991). It is based on the premise that individuals commit to certain behaviours by assessing them and by considering the social and personal attitudes towards them to make a rational and sensible decision (Ajzen, 1991).

Health Action Process Approach (HAPA) also harnesses an individual's motivation through two behavioural phases; forming an intention (motivation phase), followed by a stage of planning the action (volition phase). This theory enables a person to plan a path towards goal attainment; a model that would be suited for sustaining outcomes (MacPhail et al., 2014).

Motivation is also the focus of the Information-Motivation-Behavioural-Skills Model (IMB) integrated with health-specific information and behavioural skills. Without this foundation, a person may not be effective in achieving the outcomes of health coaching (Mayberry & Osborn, 2014).

The Social Learning Theory (SLT) also follows an integrative approach, which incorporates a combination of cognitive learning theory and behavioural learning theory. It involves four requirements for learning; these include observation, retention, reproduction, and motivation. A behavioural change based on this theory occurs instinctively as it is modelled on the observed behaviour, as such this theory could be used for a range of interventions (Davis et al., 2015).

The Social Cognitive Theory (SCT) is also based on observed behaviours. The theory recognises that a person's experiences are influenced by their surroundings, which include their interactions with individuals, the environment, and behaviours. The model also dependant on a person's former experiences. Therefore, if a person's previous learning experiences were encouraging or rewarding, they are likely to pursue a new experience with the assumption that it will also be favourable (Rosenstock et al., 1988).

1.3.2. Pharmacy health coaching

The majority of reported pharmacist health coaching studies have been conducted in the United States of America (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012). Pharmacist health coaching studies have also been conducted in the Netherlands (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b), United Kingdom (UK) (Barnett & Flora, 2017), and Denmark (O. H. Brook et al., 2003). Most studies have assessed the effects of pharmacist health coaching interventions in individuals with chronic health conditions. These include diabetes depression, hyperlipidaemia, and hypertension (Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012).

As part of the health coaching service, the pharmacist educates the patient, assists in goal setting, and actively follow-up the patient's progress. These pharmacist-led health coaching interventions have resulted in improvements to a patient's clinical markers, medication adherence as well as an

understanding of their chronic health condition (Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012).

Despite the evidence of successful pharmacist health coaching interventions conducted internationally, there is no published research around health coaching provided within Australian community pharmacies by pharmacists.

1.4. Competency Frameworks and Health coaching

In Australia, the education, training, accreditation, and career progression of pharmacists is based on the National competency standards framework (Pharmaceutical Society of Australia, 2016). The framework encompasses a range of skills, knowledge, attitudes, attributes, and accompanying behaviour(s) (Pharmaceutical Society of Australia, 2016). However, despite the breadth, the framework can be criticised for following the worker-orientated approach, which focuses on the performance of pre-defined behaviour/s that pharmacists require to effectively perform their roles (Gonczi et al., 1990). With the focus on a relatively small number of competencies, it is possible to overlook other competencies that may also be important (Gonczi et al., 1990; Wright & Morgan, 2012). As such, it is plausible that the specific competencies required for the provision of professional pharmacy services such as health coaching are not encompassed within the framework and require clarification. Furthermore, given that there are currently no definitive competencies associated with health coaching the need for a comprehensive research strategy is justified.

1.5. The importance of research about health coaching in pharmacy

Considering the favourable outcomes of pharmacist health coaching interventions internationally, for patients with chronic health conditions, coaching is a potentially valuable service to offer within community pharmacies in Australia. There are several potential reasons, which limit the uptake of health coaching more broadly:

- Lack of a grounded definition of health coaching limits the comparison of studies and therefore the development of an evidence base for health coaching.
- Lack of definitive competencies, which enable health coaching means that additional training is not evidence-based.
- No published Australian studies supporting the role of pharmacists as health coaches. Without an evidence base, it is inappropriate to introduce a new service into existing clinically proven professional pharmacy services.

Consequently, this research aimed to further the current knowledge base regarding health coaching and to run and evaluate the outcomes of a pilot project in which community pharmacists undertook the role of a health coach in Australia.

1.6. My Presence within The Research

The outcomes of clinical studies conducted within the pharmacy are imperative towards expanding the role of pharmacists, as well as the introduction of innovative professional pharmacy services (Simpson et al., 2001). However, much of the data collated from clinical studies about the expanded role of pharmacists is inadequate. Most studies have involved retrospective reviews or uncontrolled, prospective studies of short duration with limited numbers of patients, or have been hospital pharmacy studies (Simpson et al., 2001). This may be attributed to the limited exposure that pharmacists have to the research methodology involved in clinical research (Simpson et al., 2001).

Key stakeholders in the pharmacy profession have recognised the value of providing research skills training to pharmacists and have indicated a need for newly registered pharmacists to be able to utilise critical thinking, research, and problem-solving skills to provide patient-centred care (Fuji & Galt, 2009). As such, pharmacy programs in Australia, Canada, and the United Kingdom have included this in their curricula (Fuji & Galt, 2009).

Despite the emphasis on clinical pharmacy research towards optimal patient care and being well situated to conduct clinical research, pharmacists have reported several barriers to participate in it, these

included the lack of remuneration for research, time, interest, and research skills (Peterson et al., 2009; Simpson et al., 2001).

As a practicing pharmacist myself, I am in an ideal position to conduct clinical research. Furthermore, I am not burdened by the barriers reported in the literature, which have influenced the lack of practice-based research by pharmacists.

I am very grateful to have received a scholarship as part of my Ph.D. candidature. Although not considered remuneration, with this I have been able to devote significant time towards my research, without financial apprehension.

Furthermore, the best reward from this research has been the interactions with patients and being able to expand my role as a pharmacist to a health coach. I endeavour that each of my patients has developed skills that they will be able to apply to the management of other health conditions. My interest in improving and extending the role of community pharmacists to help patients improve their health and wellbeing has been the driving force and motivation for this research. I can see how the lack thereof, could be a hindrance to the implementation of clinical research by pharmacists.

In addition to my motives, there were a few advantages to conducting clinical research within my professional field. For one, I already possessed a high degree of knowledge about the medications and clinical management of several health conditions. This assisted in the design and methods phase of the research, in particular the selection of the target population. I also had an understanding of the services currently offered within the community pharmacy, the underlying processes involved as well as the barriers to and facilitators to the services; these were of focus when designing the health coaching program component of this research. Another benefit to my role as a pharmacist was that I had prior experience in interacting and communicating with pharmacists as well as patients. This experience assisted me during my research, as I was able to build a rapport with participants, which lead to more open conversations with them. Having a shared background to some of the participant's meant that they could reveal opinions and attitudes, by way of opening and extending the depth of a discussion. This

allowed me to challenge participants constructively to elicit further information, which broadened my investigation about health coaching as a service within the community pharmacy.

Despite the benefits that came with my role as a pharmacist, I also strongly acknowledge and appreciate the need for further training in research skills especially for pharmacists seeking to pursue a role in clinical research. I believe that my role as a researcher would not have been as straightforward without my background in pharmaceutical sciences and experience within clinical trials; it has provided me the groundwork on which to build my clinical research. It would have otherwise been challenging for new researchers coming from practice to research to have enough knowledge about clinical trial design and conduct.

1.7. The challenges of co-existing roles

The clinician-researcher is an individual who conducts research and practices within their profession. Their research produces rich data, and as such, they are an important figure in health research. However, this type of researcher and the research that they conduct can be subject to several ethical challenges. These relate to the: researcher/participant relationship, researcher's subjective interpretations of data, and the study design itself (Orb et al., 2001; Yanos & Ziedonis, 2006). These can be minimised through adherence to research ethical practice. Research ethics involves guidelines on routine work, maintaining the safety and dignity of subjects, and the dissemination of the research information (Fouka & Mantzorou, 2011).

As part of this research, at times I played the role of a researcher, health coach, and pharmacist in tandem. Although efforts were made to keep the roles independent, there was an unavoidable crossover between them. This had the potential to affect the following: (1) ethical research practice, (2) research methodology, and (3) dissemination of the findings.

1.7.1. Ethical Research Practice

The purpose of clinical research is to produce evidence-based knowledge to improve health and or enhance the understanding of human biology. Participants who take part in such projects are the means

of acquiring this information. However, clinical research has the potential to profit, as a result of placing a group of participants at risk of harm, for the benefit of others (Emanuel et al., 2000). Ethical research requirements for clinical research, however, have been implemented to minimise the risk of harm to participants (National Health and Medical Research Council, 2018).

As a community pharmacist, health coaching participants at my place of work brought forward similar ethical challenges. According to the National Statement on Ethical Conduct in Human Research (2018), section 4.3 'People in dependent or unequal relationships' (National Health and Medical Research Council, 2018); a pharmacist researcher is said to be in a pre-existing relationship with the study participants when the study is conducted at their site of practice. Owing to the pre-existing trust and rapport the pharmacist researcher has with their patients, there is a risk of coercion during recruitment, rather than participants altruistically wishing to contribute to the research (McConnell-Henry et al., 2010). To minimise these ethical issues because of my co-existing roles, recruitment of study participants excluded myself and was undertaken by the pharmacy staff. Furthermore, participants would provide informed consent to me and take part in the intervention component of the research, at times outside my employment hours at the site. Therefore, by clearly defining the role of the researcher and discussing the intention of the study with the participants and the site members, the risks of the researcher being regarded as undertaking a questionable activity were eliminated (McConnell-Henry et al., 2010). As such, the perception that the researcher could be used as another pair of hands during busy periods was also overcome (Orb et al., 2001). This negotiation with my workplace and study participants reduced false expectations and ethical issues. Furthermore, to aid the credibility of the research findings, and ensure the clinical study was completed within the projected timeframe an additional pharmacist from the workplace was also recruited to provide health coaching. The processes used, and records of participant outcomes for both coaches were periodically compared to ensure fidelity. The measures employed to minimise ethical issues were effective and the research strategy was deemed robust.

1.7.2. Research Methodology

Problems associated with the reliability, validity, and meaningfulness of the data can result when research is conducted within one's workplace (Morse & Field, 1995). As such, particular care needs to be taken during the design and conduct of the research. My co-existing roles as part of this research brought forward many opportunities to address the question of the trustworthiness of the study. Credibility checking is a quality process that aims to ensure that the outcomes of research are accurately described and performed (Krefting, 1991). It is considered to be parallel to the internal validity of a study (Riege, 2003). The internal validity of this research was maintained through the application of both quantitative and qualitative methods. The combined approach provides for a more comprehensive data set, also allowing for cross-validation (Jick, 1979).

To facilitate credibility checking, data was collected in the form of paper-based case study report forms, as well as audio recordings, during the health coaching intervention component of this research methodology. The audio recordings supported the manual data collected and facilitated the verification of the participants' data sets.

Likewise, at various periods during the research, interviews were conducted with participants. The group of participants interviewed varied depending on the stage of the research. To maintain the validity, and comparability amongst interview responses, interviewees in each participant group were asked the same questions in a structured format. This minimised the risk of participants over-identifying with the researcher, whereby an otherwise common ground would become permeable to oversharing and personal accounts unrelated to the study (Hay-Smith et al., 2016).

In qualitative research, the researcher and participants mutually and continually affect each other during the research (Jootun et al., 2009). This can lead to issues with the validity and objectivity of the research data (Ahern, 1999).

Reflexivity is one of the pillars of critical qualitative research, it involves the researcher's awareness of their role in the practice, process, and outcome of their research, to minimise the influence of objectivity (Jootun et al., 2009).

As such, by maintaining a self-reflective journal the research bias was intended to be limited throughout this research. Further, with the data collected on participant views, as well as personal feelings and thoughts I was able to engage in the reflexive process by comparing, evaluating, and analysing the various sources of data.

1.7.3. Dissemination of the Findings

A significant portion of this research has been based on qualitative methods. The interpretation and analysis of this type of data need to be well prepared and documented for it to be distinguished as scientific rather than superficial conjecture (Malterud, 2001).

My intertwined roles as part of this research brought forward challenges in the dissemination of the research findings. Having collected the data myself, it was subject to biases during analysis and interpretation; further, my pre-existing relationship with the study participants had the potential to affect the conclusions drawn. A systematic process of analysis (Malterud, 2001) however minimised these biases. As part of this research, any data collected was de-identified, and participants were assigned a number code. Thus, at the point of analysis, the possibility of bias was eliminated. In addition, the use of quantitative data collection methods during this research enabled crosschecking and supported the qualitative data during analysis and interpretation.

Co-existing roles during research although advantageous, is not without its downsides and pitfalls, though, can be overcome through acknowledgement, careful planning of the research, and dissemination of the research findings. Consequently, this type of research can generate comprehensive research outcomes.

1.8. Thesis Aims and Objectives

The general aim of this Ph.D. thesis was to explore the opportunity for Australian community pharmacists to health coach and to assess the outcomes of a defined health coaching intervention provided by community pharmacists in Australia. The specific objective of each chapter of this study were to:

- Establish a grounded definition of health coaching (Chapter 2).
- Identify the competencies of health professionals as health coaches (Chapter 3).
- Determine if pharmacist competency standards frameworks encompass the competencies required to health coach (Chapter 4).
- Investigate if the Australian pharmacist competency frameworks encompass the competencies required to provide behaviour change interventions (Chapter 5).
- Investigate which pharmacist health coaching modality provides the best patient outcomes (Chapter 6).
- Investigate why health coaching has not become a prominent service in Australia (Chapter 7).
- Develop and implement a pilot health coaching project in a Victorian community pharmacy (Chapter 8).
- Evaluate the opinions, attitudes, and experiences of participants that received health coaching, and the pharmacists that provide it (Chapter 9).

1.9. Thesis Structure

The chapters of this thesis are systematically organised into 10 chapters within two distinct phases of the research strategy and the structure of which is shown in Figure 1.1. The column on the left of the figure shows the objective of each section which follows successively, these are addressed methodologically by the corresponding chapters, shown in the centre column, while the column on the right shows the overall purpose of the chapter. This figure is replicated at the beginning of every chapter, to provide a prompt of where the chapter fits within the thesis.

Chapter 1 provides the background and rationale for the research and the conceptual and theoretical framework. This includes an explanation of the candidate's dual role as a researcher and pharmacist. It also presents an overview of the research and the disposition of the thesis.

Chapters 2-9 comprise a sequential suite of results, which have been prepared as manuscripts for submission to refereed journals; therefore, there is some inevitable repetition of information,

particularly in the introduction and methods sections. The manuscripts are presented in their final versions. These are proceeded by Chapter 10, which includes a summary of the key findings.

Where participants were involved, ethics approval and informed consent of participants was obtained by the pharmacist health coaches. The ethics approvals and associated documentation are supplied as appendices at the end of the thesis.

Harjit K Singh is the primary author of each publication. In addition, the publications have co-authors, the thesis supervisors who contributed to the concept, design, data collection, data analysis, data interpretation, drafting, or revision of the manuscripts. Statements of authorship for the published manuscripts are provided in the relevant chapters.

Chapter 2. A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes: This chapter reviews the available literature on pharmacy health coaching and the outcomes to establish a grounded definition of health coaching which can be applied to evaluate the outcomes of existing pharmacist-led health coaching studies. This work constructs the foundation for the forthcoming research in this thesis. This chapter has been published in **Research in Social and Administrative Pharmacy.**

> Singh, H. K., Kennedy, G. A., & Stupans, I. (2019). A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes. *Research in Social and Administrative Pharmacy*, *15*(3), 244-251.

Chapter 3. Competencies and Training of Health Professionals Engaged in Health Coaching: A Systematic Review: This chapter uses the grounded definition of health coaching to first identify various health professionals as health coaches, and in parallel identify the competencies required for health professionals to provide health coaching. This chapter has been published in **Chronic Illness.**

> Singh, H. K., Kennedy, G. A., & Stupans, I. (2020). Competencies and Training of Health Professionals Engaged in Health Coaching: A Systematic Review. *Chronic Illness*, 1742395319899466.

Chapter 4. Implementing Coaching as a Community Pharmacy Service – Analysis of the Required Competencies in Australia, Canada, New Zealand, the United Kingdom, and the United States of America: This chapter determines if the competency frameworks of pharmacists include the competencies required to health coach. In the process, the previously identified health coaching competencies are mapped to the competency framework of pharmacists from countries in which pharmacists have successfully provided health coaching interventions as well as Australia and New Zealand. Gaps in the competency frameworks of some countries were identified emphasising the need for health coach training programs. This chapter has been submitted to **Health and Social Care in the Community.**

> Singh, H., Kennedy, G. A., & Stupans, I. (2020). Implementing Coaching as a Community Pharmacy Service – Analysis of the Required Competencies in Australia, Canada, New Zealand, the United Kingdom, and the United States of America. *Health and Social Care in the Community.* (Submitted 13/05/2020)

Chapter 5. Does the National Competency Standards Framework for Pharmacists in Australia Support the Provision of Behaviour Change Interventions? This chapter interrogates whether the competencies of Australian pharmacists include the competencies required to perform behaviour change interventions. The competencies required to perform behaviour change interventions are mapped to the Australian pharmacist competency framework. Qualitative analysis revealed that the current competency framework for Australian pharmacists does not support the provision of behaviour change intervention such as health coaching. This chapter has been submitted to **Health Promotion Journal of Australia.**

> Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the National Competency Standards Framework for Pharmacists in Australia Support the Provision of Behaviour Change Interventions? *Journal of Pharmaceutical Policy and Practice*. (Submitted 28/10/2020)

Chapter 6. Does the Modality Used in Health Coaching Matter? A Systematic Review of Health Coaching Outcomes: This chapter synthesises the qualitative literature to identify the various

modalities used by pharmacists during health coaching interventions and investigates the patient health outcomes to determine if a specific approach is more effective. The analysis revealed that no health coaching modality is superior and that the approach used by pharmacists should be tailored to the patient. This chapter has been published in **Patient Preference and Adherence.**

> Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the Modality Used in Health Coaching Matter? A Systematic Review of Health Coaching Outcomes. *Patient Preference and Adherence, 14*, 1477.

Chapter 7. Pharmacist Health Coaching in Australian Community Pharmacies: What Do Pharmacy Professionals Think? This chapter is a qualitative study. Semi-structured interviews with key stakeholders within the Australian pharmacy profession were conducted to evaluate their opinions and attitudes towards health coaching and the reasons why the service is currently not provided in Australia. Thematic analysis of the results revealed several barriers and facilitators to health coaching within the community pharmacy. This chapter has been published in **Health and Social Care in the Community.**

> Singh, H. K., Kennedy, G. A., & Stupans, I. (2020). Health Coaching in Australian Community Pharmacies: What Do Pharmacy Professionals Think? *Health & Social Care in the Community*. *28*, 1190-1198.

Chapter 8. A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension: This chapter presents the quantitative results of a pilot pharmacist health coaching study for participants with poorly controlled hypertension. Unique to the existing literature, the study also investigates the changes to participant health behaviours as an outcome of health coaching. This chapter has been submitted to **BMC Family Practice.**

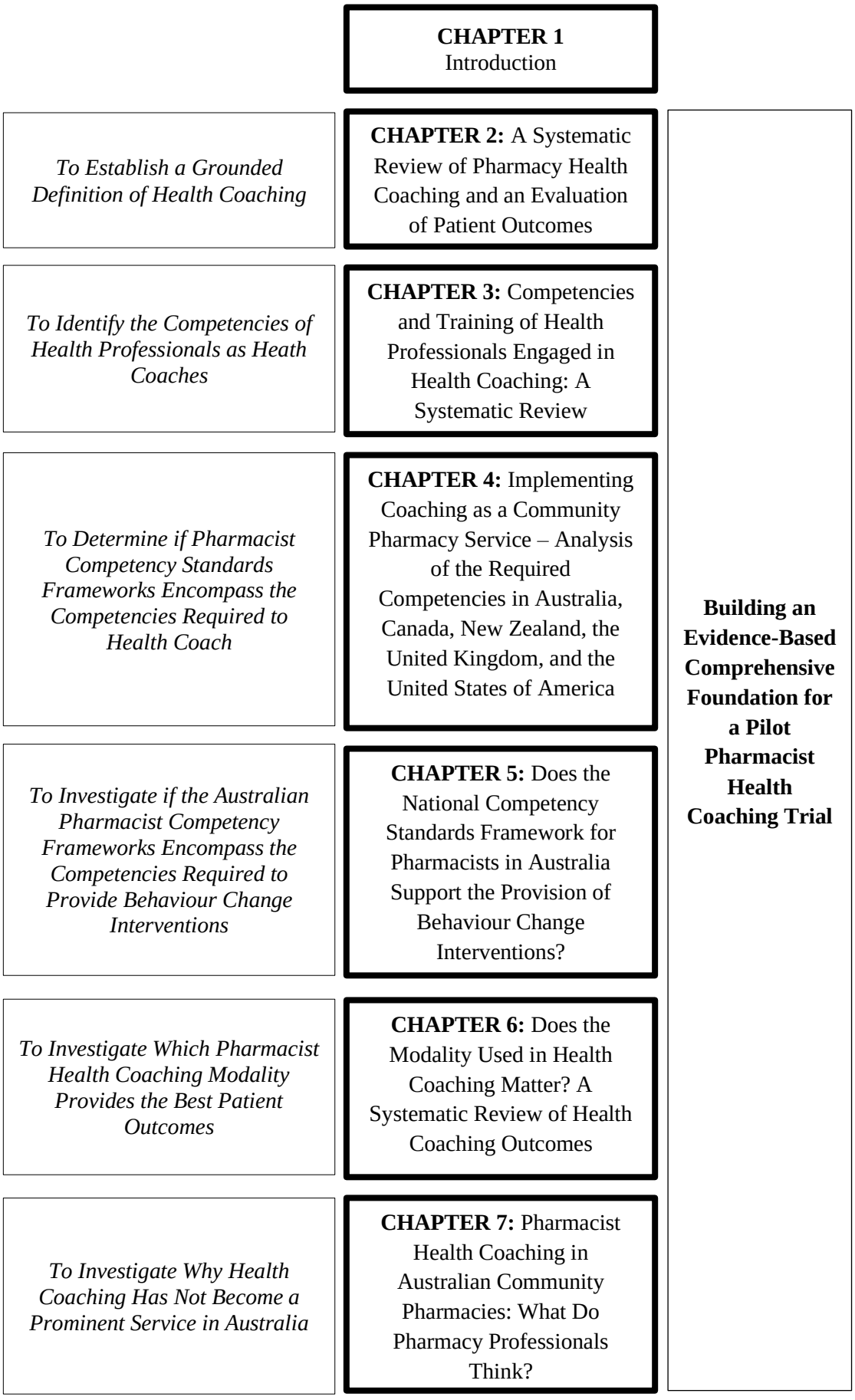
> Singh, H., Kennedy, G. A., & Stupans, I. (2020). A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension. *BMC Family Practice.* (Submitted 11/06/2020)

Chapter 9. A Pilot Australian Pharmacist Health Coaching Trial of Participants with Poorly Controlled Hypertension: A Qualitative Study of Participants' and Coaches' Experiences: This chapter qualitatively discusses the journey of participants with poorly controlled hypertension who receive health coaching from an Australian community pharmacist. The study also independently evaluates the opinions, attitudes, and experiences of patients that receive health coaching and pharmacists that provide it. This chapter has been accepted for publication by **Patient Preference and Adherence.**

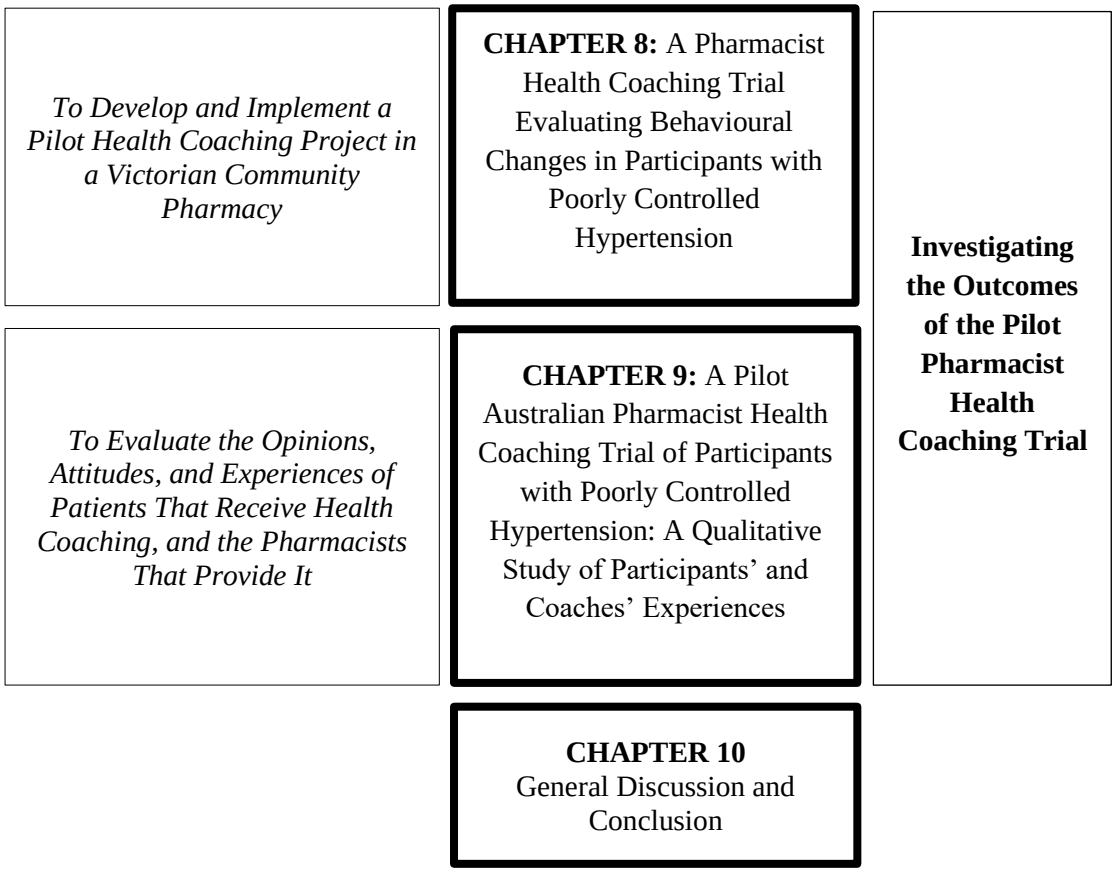
> Singh, H., Kennedy, G. A., & Stupans, I. (2020). A Pilot Australian Pharmacist Health Coaching Trial of Participants with Poorly Controlled Hypertension: A Qualitative Study of Participants' and Coaches' Experiences. *Patient Preference and Adherence*. (Accepted 11/01/2021)

Chapter 10. General discussion and Conclusion: This chapter highlights the main findings from this research and provides suggestions for future work based on the findings outlined in this thesis.

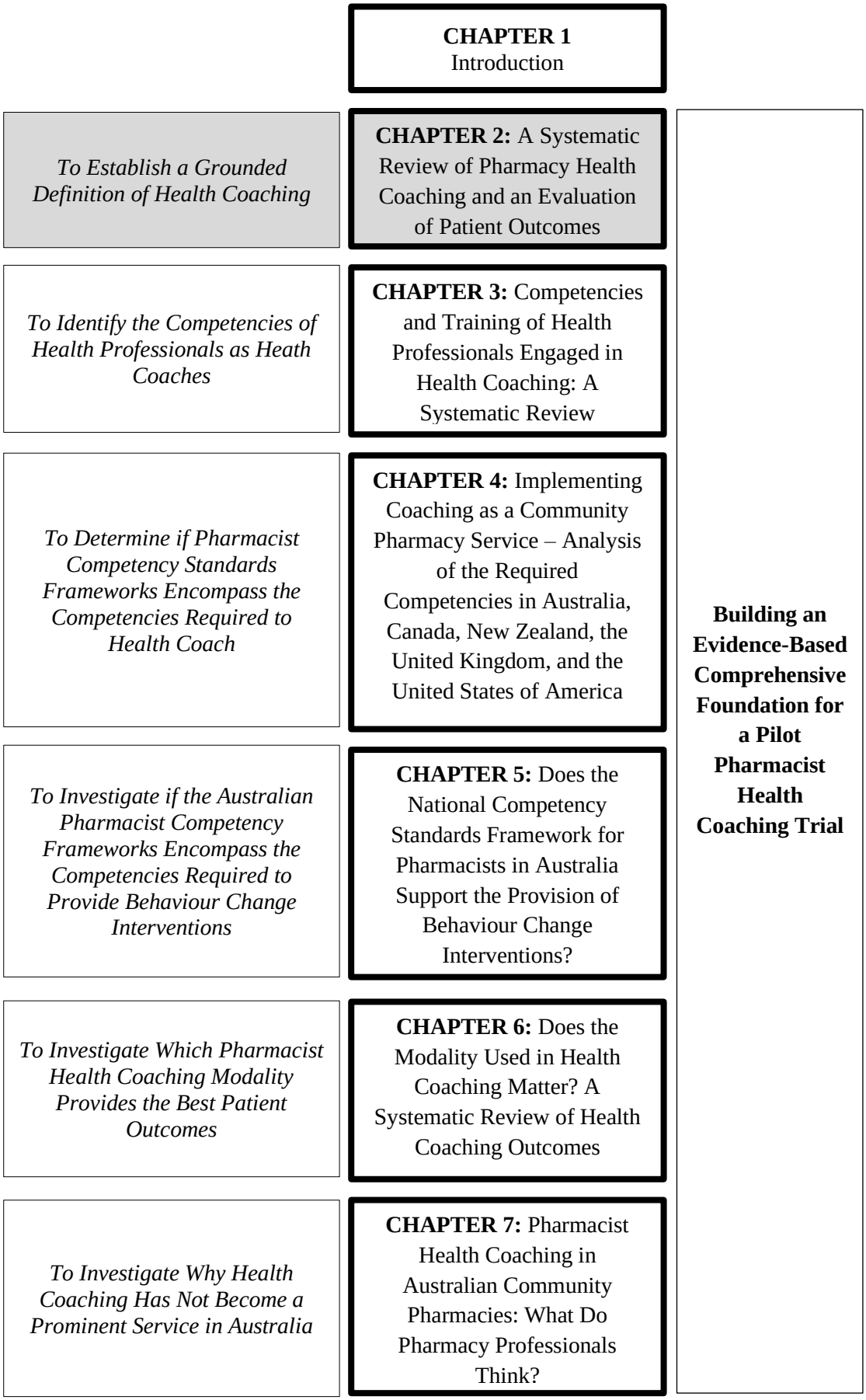
Figure 1.1 Structure of Thesis and Location of Included Chapters



Continuation: Structure of Thesis and Location of Included Chapters



CHAPTER 2


CHAPTER 1
Introduction
To Establish a Grounded Definition of Health Coaching
CHAPTER 2: A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes
To Identify the Competencies of Health Professionals as Heath Coaches
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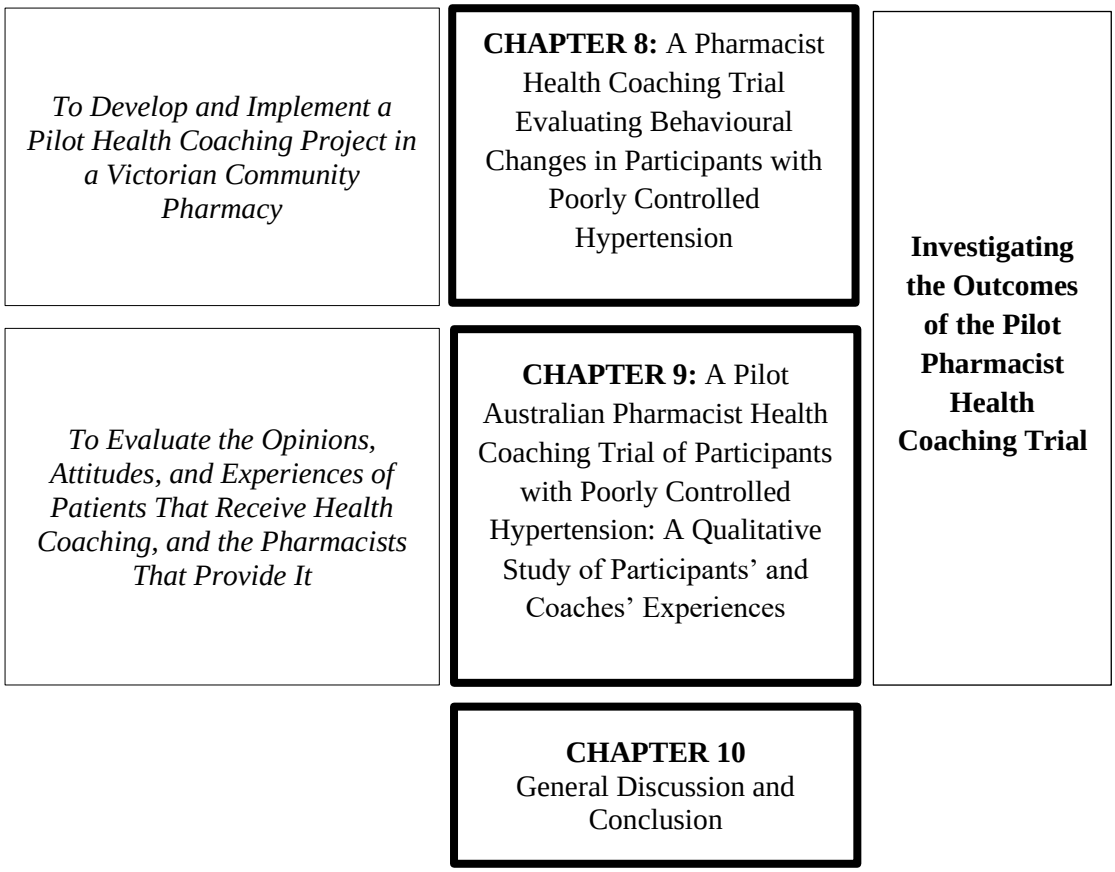
CHAPTER 7: Pharmacist Health Coaching in Australian Community Pharmacies: What Do Pharmacy Professionals Think?
Building an Evidence-Based Comprehensive Foundation for a Pilot Pharmacist Health Coaching Trial


To Develop and Implement a Pilot Health Coaching Project in a Victorian Community Pharmacy
CHAPTER 8: A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension
To Evaluate the Opinions, Attitudes, and Experiences of Patients That Receive Health Coaching, and the Pharmacists That Provide It
CHAPTER 9: A Pilot Australian Pharmacist Health Coaching Trial of Participants with Poorly Controlled Hypertension: A Qualitative Study of Participants' and Coaches' Experiences
Investigating the Outcomes of the Pilot Pharmacist Health Coaching Trial
CHAPTER 10
General Discussion and Conclusion

CHAPTER 2

A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes

This work has been previously published in - Singh, H. K., Kennedy, G. A., & Stupans, I. (2019). A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes. *Research in Social and Administrative Pharmacy*, *15*(3), 244-251.

Contributions of each author:

Contributor	Statement of contributions
Singh, H. K	Literature searching and screening of titles (100%) Screening of abstracts (50%) Review and analysis of data (75%) Drafting and editing of paper (80%)
Kennedy, G. A	Review and analysis of data (5%) Drafting and editing of paper (5%)
Stupans, I	Screening of abstracts (50%) Review and analysis of data (20%) Drafting and editing of paper (15%)

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Chapter Overview

Although several international studies investigating the outcomes of pharmacists as health coaches have been reported in the literature, the variance in the underlying definitions of the service have made comparisons between studies challenging.

The intent of this chapter was to compile the existing definitions of health coaching within the literature, to formulate a grounded definition of health coaching. A grounded definition would enable the selection and evaluation of comparable studies, the identification of the health conditions for which pharmacists can provide health coaching, and the resulting clinical and non-clinical outcomes. The results of this chapter established the groundwork for further research in this thesis.

Contribution to Practice

The previous lack of a grounded definition of health coaching has made it difficult to compare studies and draw practical implications within pharmacy. A clear definition of pharmacy health coaching can be used as the basis for both further research, and the potential further expansion of coaching services by pharmacists. The definition, although specific to pharmacists, is flexible enough to be used by other health professionals for the purpose of health coaching.

Abstract

Objective: The objective of this review was to synthesise the available empirical evidence regarding pharmacy health coaching and to define it.

Methods: This systematic review followed the PRISMA guidelines. CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS) were searched (2000-2017) to identify sources related to pharmacy health coaching. Included articles were reviewed for their definition and outcomes of health coaching as well as recurring terms/themes pertaining to health coaching.

Results: Ten papers met the eligibility criteria. The results of each empirical study, as well as the definitions, were used to identify the key outcomes associated with pharmacy health coaching and were then cross-tabulated. The most commonly occurring outcome of health coaching was an improvement in a health outcome of a target population. Improvement in medication management/ adherence and the relationship between health professionals was equally evident. Lastly, an improved attitude towards drug therapy was referred to more often than the cost-effectiveness of health coaching.

Conclusions: The evaluations enabled the formulation of a grounded definition of health coaching.

Keywords: health coaching, pharmacy, definition, themes, health outcomes, behaviour change

Introduction

The prevalence of preventable chronic diseases linked to unhealthy behaviours is increasing worldwide[1]. This has put significant strain on healthcare infrastructures globally(Wolever et al., 2013). Community-based programs instigated by the pharmacist have been proposed and trailed as a solution to this problem. At the frontline of the healthcare system, pharmacists are highly accessible health care professionals and are conveniently available to patients without the need for an appointment or booking. However, despite being comprehensively trained health care professionals, the skills of a pharmacist are often overlooked. The concept of pharmacists moving beyond their traditional dispensary duties was first introduced in the 1980s. It was proposed that pharmacists extend their role to the provision of services such as medication reviews, screening, in-depth counselling sessions, and medication education (Spencer & Edwards, 1992). Health coaching; a veteran concept of the 1950s, has recently gained some attention within pharmacy. Originally this approach was successfully used by doctors and nurses to guide expectant mothers in preparation for labour (Janeway, 1951).

Various forms of coaching have been used to improve people's performance across a range of human endeavours. There are many different types of coaches (life skills coach, business coach, sports coach, and health coach to name a few); consequently, there are many different definitions and boundaries of what coaching is (Jordan, 2013; Lonie et al., 2017).

Health coaching is largely an unregulated market in which the widespread understanding is that health coaches are not required to have expertise or formal qualifications, but rather have the skills to facilitate, support, challenge, and guide a change in a client to achieve a goal (Wolever et al., 2011). The term has also been applied to a broad range of interventions aimed at improving health outcomes. These include digital automated messages to programs of sessions with a trained professional for a patient-centred approach aimed at behaviour change and goal attainment (Smith et al., 2013).

The theoretical foundation of coaching is based on psychological concepts (Lonie et al., 2017). Several types of models and theories form the basis of behavioural change in coaching. Those most frequently referred to in the literature include the Transtheoretical Model of Change (TTM), the Theory of Planned

Behaviour (TPB), Social Cognitive Theory (SCT), the Information- Motivation- Behavioural-Skills Model (IMB), Self Determination Theory (SDT), Health Action Process Approach (HAPA), and the Social Learning Theory (SLT) (Davis et al., 2015). Each theory is distinct; however, coaching recognises that individuals intrinsically learn in different ways, and thus the process could involve one or a combination of models or theories, which may complement one another (Lonie et al., 2017).

The Transtheoretical Model of Change is also referred to as the stages of change (SOC) approach, as it involves five stages of change; pre-contemplation, contemplation, preparation, action, and maintenance (Shearer et al., 2003). These stages incorporate several principles and theories of change; hence the name *Transtheoretical*. This model of change is best suited to individuals that lack an internalised motivation to change their behaviour, as each stage assists an individual to recognise their internal readiness to change (Shearer et al., 2003).

Advancement of the Theory of Reasoned Action is the Theory of Planned Behaviour (TPB). It assumes that individuals undertake specific behaviours by evaluating them and considering the social and personal attitudes towards them to make a reasoned and logical decision (Ajzen, 1991). This theory is influenced by social norms and attitudes, a change in which, can impact the results of an intervention (Ajzen, 1991).

The Social Cognitive Theory (SCT) was previously referred to as the Social Learning Theory (Rosenstock et al., 1988).This theory recognises that a person's learning is influenced by their surroundings, which include their interactions with people, the environment, and behaviours. This theory also takes into consideration a person's previous experiences. Thus, if an individual's previous learning experiences were positive or successful it is probable, they will attempt a new one with the notion that it too will be favourable (Rosenstock et al., 1988).

The Information- Motivation- Behavioural-Skills Model (IMB) considers that intervention outcomes are based on the provision of health-related information, motivation, and behavioural skills (Mayberry & Osborn, 2014). Without this groundwork, an individual may not be successful in achieving the outcome (Mayberry & Osborn, 2014).

The Self Determination Theory (SDT) is based on a continuum of motivation. It considers that by supporting an individual's intrinsic motivation they will behave healthily, whilst an individual that is amotivated will probably not behave in a healthy manner (Orsini et al., 2016). This suggests that the theory would not be a favourable behavioural change model for individuals lacking motivation.

Health Action Process Approach (HAPA) involves two behavioural phases, forming an intention (motivation phase), followed by a stage of planning the action (volition phase). This model facilitates an individual to plan a route of achievement to a personal goal; an approach that would be better for sustaining long-term outcomes (MacPhail et al., 2014).

Social Learning Theory (SLT) is a combination of cognitive learning theory and behavioural learning theory. It involves an integrative approach of four requirements for learning; these include observation, retention, reproduction, and motivation. A behavioural change based on this theory occurs instinctively and could be used for a range of interventions.

The main concept to take from each of the theories and models mentioned is that all are based on facilitating a change in a client to reach a defined goal and that there is no "one-size fits all" approach and the integration of models and theories may achieve better outcomes (Barnett & Sanghani, 2013; Lonie et al., 2017).

In recent times the impact of pharmacy health coaching interventions has been studied to determine its outcomes on several chronic diseases including diabetes, hypertension, obesity, depression, and hypercholesterolemia (Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). In addition, some studies have also examined health coaching as a means of improving a patient's understanding of medicines prescribed as well as concordance and adherence thereof (Barnett & Flora, 2017; Barnett & Sanghani, 2013; Herborg et al., 2008; Wertz et al., 2012). Despite the attention and research on health coaching, a problem lies in its definition. Each study defines the concept as well as the interventions and skills required to coach differently. Similarly, several papers theoretically describe the concept of health coaching as well as the skills and methods required but do not support the

descriptions with empirical research. Although similar concepts and themes can be recognised, there is a need to establish a grounded definition of what health coaching is and establish what skills are required.

Health coaching is a dynamic process that can be influenced by many factors which include the definition used, training processes and skill set required, and the number and duration of screening sessions provided (Barnett & Sanghani, 2013). By defining the concept of health coaching provided by pharmacists and evaluating the health outcomes of implementation, a more reliable data set from health coaching studies in pharmacy would result and, this would be of greater value to the profession.

Methods

Search Strategy

The PRISMA guidelines were followed for this systematic literature review. Five databases (CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS) were systematically searched to identify the scholarly sources related to pharmacy health coaching. There was an overlap in the journals that were captured, and therefore we are confident that the relevant journals were found in the databases, utilised, and included in the review (Table 2.1). Outlined in Table 2.2 is the combination of search terms that were used to source the relevant literature.

Limitations were placed around the searches and this included the publication time frame of the year 2000 to 2017. The decision to limit the publication period was based on the observation that the initial search of the literature showed that the concept of pharmacists performing roles outside the dispensary only came about relatively recently in the 1990s; whilst the concept of "coaching "within pharmacy involving pharmacists arose in the early 2000s (around 2003). Consequently, the search of the literature was restricted to between 2000 and 2017.

Table 2.1. Justification for the Choice of Databases for Literature Search

Journal	CINAHL	EMBASE	PubMed	Psych INFO	SCOPUS
American Journal of health –system pharmacy	■	■	■		■
Journal of Clinical Pharmacy & Therapeutics	■				■
Population Health Management,	■		■		■
American journal of pharmaceutical education		■	■		
BMJ innovations		■			■
Canadian pharmacists journal		■	■		■
European Journal of Hospital Pharmacy		■			■
European Neuropsychopharmacology		■	■	■	■
Health Education and Behavior		■	■	■	■
Health Education Journal		■			
Hospital Pharmacy		■	■		
Infectious Diseases and Therapy		■			■
International Journal of Clinical Pharmacy		■			■
The International Journal of pharmacy practice		■	■		■
Journal of Pharmacy Practice		■	■	■	■
Journal of Pharmacy Practice and Research		■			
Journal of the American Pharmacists Association		■	■		■
Managed care (Langhorne, Pa.)		■			
Pharmaco Economics		■	■	■	■
Pharmacy Practice		■			■
Pharmacy World and Science		■			■
Research in social & administrative pharmacy: RSAP		■	■	■	
Canadian Respiratory Journal			■		
The diabetes educator			■	■	
Health policy			■		
Journal of Evaluation in Clinical Practice			■		
The Lancet Infectious Diseases			■		
Managed care			■		
The Permanente Journal			■		
Pharmacy World & Science journal			■		
Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy			■		
Pharmacy (Basel)			■		
Pharmacy Education: An International Journal of Pharmaceutical Education				■	
Currents in Pharmacy Teaching and Learning					■

Grey shading indicates the journal is referred in the corresponding database.

Table 2.2. Search Terms and Databases Reviewed

Database	Term/s
CINAHL with full text	Health coaching AND pharmacy AND health (search 1) Limiters - Full Text; Published Date: 20180101-20001231; English Language; Peer Reviewed; Language: English
	Pharmacy health coaching AND pharmacist (search 2) Limiters - Full Text; Published Date: 20000101-20181231; Peer Reviewed; Language: English
EMBASE	Health coaching AND pharmacy AND health (search 1) ('coaching'/exp OR coaching) AND ('pharmacy'/exp OR pharmacy) AND ('health'/exp OR health) AND [2000-2018]/py
	Pharmacist health coaching AND pharmacy (search 2) ('health'/exp OR health) AND ('coaching'/exp OR coaching) AND ('pharmacy'/exp OR pharmacy) AND [2000-2018]/py
PubMed	Health coaching AND pharmacy AND health (search 1) Pharmacist health coaching AND pharmacy (search 2)
PsycINFO	Health coaching AND pharmacy AND health (search 1) Pharmacist health coaching AND pharmacy (search 2)
SCOPUS	Health coaching AND pharmacy AND health (search 1) Pharmacist health coaching AND pharmacy (search 2)

Inclusion and Exclusion Criteria

Records were initially included if they were peer-reviewed, were published between the years 2000 and 2017, and contained the term "coaching" within the abstract, as this identified it as a major theme of the paper. Further, the record was included if it had a definition for health coaching and if it included an evaluation of the impact of coaching by pharmacists on the health of patients/clients. Records were excluded if they: (1) were published in a language other than English; (2) did not include a definition of a health coaching intervention that was implemented by pharmacists; (3) did not include the word "coaching"; (4) articles for which we could not source the full text; and (5) grey literature. The inclusion and exclusion criteria for obtaining sources for abstracts and full papers are shown in Table 2.3.

Table 2.3. Inclusion and Exclusion Criteria for Obtaining Sources for Abstract and Full Paper Review

INCLUSION CRITERIA	EXCLUSION CRITERIA
• Published sources that are peer-reviewed (inclusive of journal articles, statements, and personal views) • Sources containing text that define (or attempt to define) "health coaching in pharmacy". • Articles between 2000-2018	• Sources published in a language other than English • Sources that define health coaching outside the context of pharmacy • Sources that do not include the word "coaching". • Articles for which we could not source the full text

Data Extraction and Validity Assessment

A single researcher initially screened the title and abstract of all papers, subsequently, the full-text copies of articles that passed the initial screening process were independently reviewed by two researchers. The third researcher was consulted when the first two researchers could not reach a decision about the inclusion/exclusion of a paper. Consensus was then reached with respect to the inclusion/exclusion.

The data extracted from the studies included: (1) country in which the study was conducted; (2) study population; (3) a definition of health coaching or an attempt thereof; (4) condition of interest; (5) number of contacts with the health coach; and (6) outcomes and impact of the study. Subsequently, the definitions were cross tabulated with the recurring key terms/themes. This allowed the identification of those that were iterative and would take weight in the formulation of the definition of health coaching, in comparison to key terms/ themes that occurred less frequently.

Quality assessment of the papers was considered according to the Cochrane Handbook for Systematic Review of Interventions. Considering the nature of the intervention being assessed, it was not always possible to blind participants and investigators. The risk of bias of each paper included in our systematic review was assessed as low; this is despite non-randomised studies being included. Given the limited studies in the field, we regard the inclusion of all studies in our systematic review as important.

Results

Literature Search and Study Selection

Figure 2.1 shows the article review process. A total of 190 records were identified of which 128 were duplicates. After the removal of duplicates, the titles, and abstracts of 62 papers were reviewed, forty-eight were considered suitable for the retrieval and review of the full-text; five additional papers were also identified as relevant from the reference lists of the full-text papers. Of these papers, one was a duplicate, and 42 were excluded as they were not relevant, did not contain a definition of health coaching, or were not within the context of pharmacy. A total of 10 papers met the eligibility criteria and were included in the final review and are summarised below in Table 2.4.

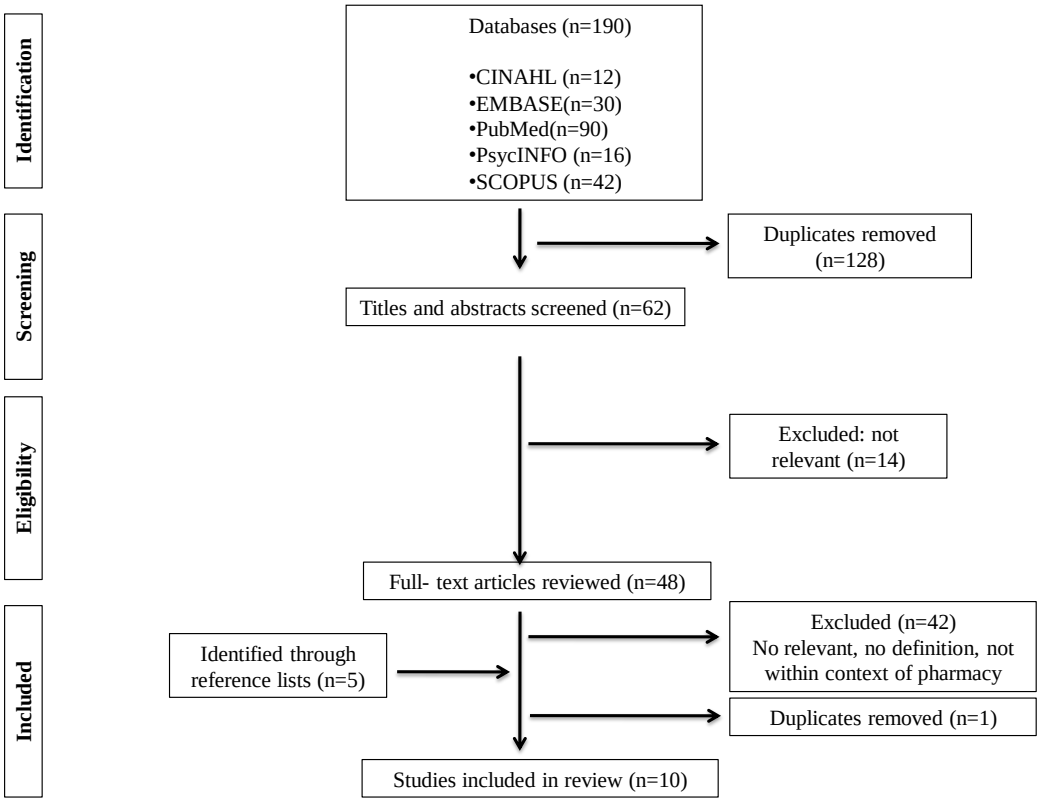

Figure 2.1. Flow Chart of the Literature Search and Selection of Items for the Systematic Review

Table 2.4. Common Theme in the Definitions of Health Coaching

Author (year)	Definition	Origin of paper	Patient-centred	Disease Management/ Health risks/prevention	Accountability of coach	Follow-up/ follow-through	Motivation	Interactive/ Partnership between client and coach	Goal	Questioning	Lifestyle modification	It is a type of service (pharmaceutical/ pharmacy care)
(DiDonato et al., 2013)	Coaches have an interactive role and motivate a client to manage their chronic illness. The health coach is held accountable for follow-through and must be supportive and provide guidance.	USA	■		■	■	■	■				
(Bosmans et al., 2007)	Coaching involves regular structured contacts with the pharmacist.	Netherlands		■				■				
(Herborg et al., 2008)	Coaching involves a partnership between the patient and pharmacist. The coach facilitates realisation within the client through reflection and structured questioning which ultimately leads to an implemented change in daily life.	Denmark						■		■		

(Luder et al., 2016)	A coaching program is referred to as an "employer-based disease management program". In this program, the pharmacist promoted lifestyle modification and goal setting to improve health outcomes and reduce health care costs.	USA										
(O. H. Brook et al., 2003a)	Coaching is referred to as "pharmaceutical care" which is patient-centred.	Netherlands										
(Barnett & Flora, 2017)	Health coaching is focused on a behaviour change. It facilitates goal setting to change lifestyle behaviours to reduce health risks, improve the self-management of chronic conditions, and increase health-related quality of life.	UK										
(Wertz et al., 2012)	Health coaching involves regular follow-up visits with a pharmacist, whereby the pharmacist provides	USA										

	education and monitoring of clinical outcomes and goals.											
(O. H. Brook et al., 2003b)	Pharmacists have the basic principles of verbal and non-verbal communication skills and as such would be well equipped and well trained to coach patients	Netherlands										

Table 2.5. Key Values of Pharmacy Health Coaching

Author (year)	Origin of paper	Key Values of Pharmacy Health Coaching						
		Improvement in health outcome	Cost-effective	Reduces burden on medical practitioners	Improved drug attitude	Improvement in medication management/adherence	Achievement of patient goals	Improved relationship between health professionals (e. GP and Pharmacist
(DiDonato et al., 2013)	USA	■						
(Bosmans et al., 2007)	Netherlands		■					
(Herborg et al., 2008)	Denmark					■		
(Luder et al., 2016)	USA	■						
(O. H. Brook et al., 2003a)	Netherlands	■			■			■
(Barnett & Flora, 2017)	UK					■		■
(Wertz et al., 2012)	USA	■				■	■	
(O. H. Brook et al., 2003b)	Netherlands	■			■			■

Summary of Included Studies

Most studies were conducted in the United States of America (USA), the Netherlands, and the United Kingdom (UK). One study was undertaken in Denmark, and one paper was a multi-continent study, which included the USA, Canada, and the UK. Of the ten papers included in the review, eight presented empirical interventions and data, while two presented a theoretical approach to discuss health coaching, which proposed what the intervention would achieve. The theoretical papers are excluded from the results.

Key Elements of Pharmacist Health Coaching

Health coaching involves several different skills; however, the results show that training was only provided in one study, in which the pharmacist training involved a two-day course provided by a psychologist who designed and delivered health coaching courses (Barnett & Flora, 2017).

Another study provided guidance to the pharmacist coaches in the form of written information and a manual on measures (Herborg et al., 2008), while two studies mentioned that pharmacists already have the communication skills necessary to coach (O. H. Brook et al., 2003a; O. H. Brook et al., 2003b;). The remaining studies did not mention the degree of training or if any was provided (Barnett & Flora, 2017; Bosmans et al., 2007; DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012).

Common Pharmacy Health Coaching Themes

The definitions from each empirical paper were cross tabulated with the key themes; this allowed the identification of the most commonly occurring themes. The most common theme amongst the definitions was the reference to a type of disease management/ health risk prevention. The next most common was the inclusion of a form of partnership or joint interaction between a client and pharmacist coach as well as mention of a form of lifestyle modification. References to health coaching involving a goal, being patient-centred as well as being a type of service were all mentioned the same number of times. Least mentioned was the accountability of the coach, the need for follow-up and motivation as

well as questioning; these were collectively only referred to in a single definition (DiDonato et al., 2013).

Identifying the Outcomes of Pharmacy Health Coaching

The outcomes of each empirical study, as well as the definitions, were used to identify the key outcomes associated with pharmacy health coaching; these were cross-tabulated (Table 2.5). The most commonly occurring outcome of health coaching provided by pharmacists was an improvement in a health outcome of a target population. Improvement in medication management/ adherence and the relationship between health professionals was equally evident. Lastly, an improved attitude towards drug therapy (O. H. Brook et al., 2003a; O. H. Brook et al., 2003b) was considered a more valuable outcome than the cost-effectiveness (Bosmans et al., 2007) of health coaching.

Pharmacist Health Coaching in Patients with Hypertension

Of the empirical health coaching studies, four focused on patients with hypertension as the population of interest (DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). These studies showed evidence of pharmacist health coaching improving blood pressure (DiDonato et al., 2013), as well as adherence to anti-hypertensive medications (Herborg et al., 2008; Wertz et al., 2012), and confidence in self-management of their condition (Luder et al., 2016).

Pharmacist Health Coaching in Patients with Diabetes

From the results, three papers focused on patients with diabetes (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012). The number of coaching sessions provided to each of the study populations differed. Despite this, there was a statistically significant improvement shown in all studies, including a reduction in fasting blood glucose levels (-4.0 mg/dL) (DiDonato et al., 2013), as well as an increase in disease awareness and knowledge (Luder et al., 2016). Health coaching in this patient population was also shown to improve medication adherence as indicated by the proportion of days covered (PDC) which was 0.78 at baseline and 0.86 at follow-up ($p < 0.05$) (Wertz et al., 2012).

Pharmacist Health Coaching in Patients with Depression

Depression is a condition that has also shown benefits to pharmacist health coaching. From the results, three studies focused on patients with depression (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b). These papers collectively focused on the same study population of newly diagnosed patients who had started on a non-tricyclic antidepressant for the first time. One paper stated that the reduction in depressive symptoms did not appear to be statistically significant (Bosmans et al., 2007); however, another stated that at the 6-month follow up two-thirds of patients were in remission (O. H. Brook et al., 2003a). Despite the contradiction, there was an improvement in drug attitude inventory scores (DAI-30) at three months, which correlated with an improvement in psychological symptoms at six months (O. H. Brook et al., 2003b) as well as patient satisfaction; 86% of the patients that received coaching would recommend coaching to others, while 54% of patients that did not receive coaching would do so (O. H. Brook et al., 2003a).

Pharmacist Health Coaching in Patients with High Cholesterol

One study looked at cholesterol levels and weight (DiDonato et al., 2013). In this study, patients were coached by the pharmacist according to their health assessment results at the commencement of the study. For those whose cholesterol was outside the Framingham Risk Assessment, targets were provided in conjunction with coaching sessions every 1-2 months for a period of twelve months. At the final assessment, there was a statistically significant improvement in clinical parameters, average total cholesterol reduced by 7.4 mg/dL, LDL by 8.7 mg/dL, and HDL increased by 3.9 mg/dL. Even though changes to mean triglycerides were not reported as statistically significant, these results demonstrate an improvement in health outcomes because of health coaching by pharmacists.

Number of Health Coaching Contacts Required for Positive Health Outcome

The number of coaching sessions provided by the pharmacist health coach varied between the studies. Three papers originating from the Netherlands used that same study population that had depression and were commencing a non-tricyclic antidepressant for the first time (Bosmans et al., 2007; O. H. Brook

et al., 2003a; O. H. Brook et al., 2003b). Each paper described the outcomes of three coaching contacts with the pharmacist; the outcomes investigated in each paper differed: cost-effectiveness, drug attitude, and psychological symptoms, respectively.

The remaining studies each had different numbers of contacts with the pharmacist health coach. The study from Denmark (Herborg et al., 2008) involved four meetings between the pharmacist coach and patient, whilst the UK (Barnett & Flora, 2017) study simply involved a single coaching contact with patients. Patients and pharmacists were both satisfied after the single coaching session; though, it is not known if this was sustained beyond this meeting. The health coaching studies from the US involved contacts with the pharmacist that varied from four to twelve sessions (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012). From the results, the number of coaching contacts with the pharmacist health coach does not appear to correlate with health outcomes.

Models of Health Coaching Mentioned

Reference to the model or theory used for the basis of the health coaching interventions throughout the literature differed. Several papers mentioned that health coaching involved a behaviour change (Barnett & Flora, 2017; DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). Reference of the health coaching intervention to patient/client centeredness was made in two papers (Barnett & Flora, 2017; O. H. Brook et al., 2003a). One paper referred to the health belief theory, the theory of planned behaviour, and the theory of reasoned action (Luder et al., 2016). This paper also mentioned that the literature did not include studies that describe patient behaviours and health beliefs that predict enrolment into disease management programs. The investigators used the mentioned theories for the basis of their study intervention.

Of the included literature, one paper did not make any reference to behaviour change, patient-centeredness, or the theory/ model used for the health coaching intervention (O. H. Brook et al., 2003b)

Discussion

Despite the various definitions of health coaching, there was considerable overlap in the types of patient groups chosen for the studies as well as the evidence of positive health outcomes. The patient populations included diabetes, depression, hypertension, and hypercholesterolemia, which are chronic conditions. This suggests that the most important characteristic in all the studies is the focus on a target population with a chronic health condition, and to improve the outcomes of the chronic health condition. This appears to correlate well with the results (Table 2.4, 2.5), which shows that the most important theme was the reference to a type of disease management/ health risk prevention. Similarly, without an improvement in medication management adherence and attitudes, the key outcome of health coaching, an improvement in health outcomes would not result.

Follow-up was not the theme of greatest importance. This was reflected in the number of visits each study required with the health coach; this ranged from 1-12 sessions (Barnett & Flora, 2017; DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). These results suggest that it may not be necessary for the health coach to have follow-up sessions with a patient. However, a lack of follow up would make it difficult to measure patient outcomes.

Furthermore, the results showed that studies involving more than four coaching contacts produced health outcomes that were not considered as statistically significant by their researchers (DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). This proposes that there may be an optimal number of coaching visits to ensure patients do not feel burdened and drop out of the study.

One study included suggested that the health professional holds accountability for the outcomes of coaching (DiDonato et al., 2013). This idea is counter to the results that show that coaching involves building a relationship with the client (Bosmans et al., 2007; DiDonato et al., 2013; Herborg et al., 2008). In this type of relationship, both people are accountable for outcomes; without the client, goals cannot be achieved and without the health professional, facilitation of goal attainment would not be possible.

The theme of lifestyle modification occurred several times in the definitions of health coaching, its importance is also mirrored in the key outcomes. A similar relationship was also observed with goal setting, with its presence also observed in Tables 2.4 and 2.5. Theoretically, without a goal and a change in lifestyle, a positive impact on health outcomes would not be possible. It would be credible to say that although motivation was not a common theme identified amongst the definitions of health coaching and was not identified as a key value of health coaching, it would play a role in actively working towards their goal and lifestyle change. Questioning was a theme that was recognised in the definitions of health coaching, though considering only a single paper (Herborg et al., 2008) mentions this and that the process of goal setting could involve a conversation we consider it unimportant in the formulation of a grounded definition.

Although not identified as a key outcome, pharmacy health coaching has been referred to as a type of service which is reasonable to say as it is something that is delivered to the patient (O. H. Brook et al., 2003a).

One study looked at the monetary value of pharmacy health coaching (Bosmans et al., 2007); the results showed that coaching was unlikely to be cost-effective in comparison to usual care. Considering the study was only conducted over 6 months it would not be meaningful to conclude on the cost-effectiveness of health coaching. Similarly, it would not be feasible to comment on the impact and value of general practitioner (GP) workloads because of the introduction of pharmacist health coaching. In the studies reviewed, GP workloads increased, as they were required to screen for and refer patients to the pharmacy for health coaching (Bosmans et al., 2007) this theoretically could be performed by pharmacists. On the other hand, the relationship between the GP and pharmacist was positive because of health coaching (O. H. Brook et al., 2003a) suggesting that increased communication between health professionals is valuable.

Although several papers in the review mentioned the term behaviour change and patient-centeredness, only one considered a model of behaviour change. This suggests that the model used in future studies would be at the researcher's discretion and its appropriateness to the study design. Strong correlations

between the themes in the definitions of health coaching and values have been observed suggesting that all those except for cost-effectiveness will have an important place in our definition. We have defined health coaching as *a service that is provided to patients by health care professionals (pharmacists) for the purpose of disease management/ health risk prevention. It involves a collaborative patient-centred interaction between the patient and coach for the purpose of a behavioural change, through the process of goal setting and follow-up. Both the coach and patient are held accountable for the patient's outcomes, though it is the role of the coach to provide expert information and facilitate the motivation of the patient in order to achieve their goal* (Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012).

This definition encompasses each of the major themes identified from the diverse individual definitions of health coaching. In addition, it also encompasses the process of behavioural change, which is the theoretical foundation of coaching.

Strengths and Limitations of the Review

This literature review was conducted using a systematic approach. Multiple databases were searched to minimise bias. In addition, a narrow range of search terms made finding papers specific to our area of interest manageable. Although some may consider this a limitation where vital information may have been missed, we are confident that the approach allowed the derivation of all relevant information. The restriction of the publication search between the years 2000 to 2017 may be considered a limitation, however, a preliminary search of the literature showed that the concept of pharmacists carrying out tasks outside of traditional dispensary roles arose in the 1990s, whilst the concept of "coaching "within pharmacy/ involving pharmacists emerged during the early 2000s. Therefore, by keeping the search criteria between the years 2000 to 2017 we avoided missing valuable information. Lastly, the review identified that the reporting of study methodologies and data differed from paper to paper. Not only did definitions differ but so did the number of health coaching visits, the training required, and the

derivation of outcome measures. Future studies that utilise our concise definition should realise outcomes that are more dependable.

Conclusion

This is the first systematic review of the definitions of health coaching within the context of the pharmacy profession. Recurring themes amongst these definitions were identified, as were the outcomes of the health coaching studies. These were used as the basis for the formulation of a grounded definition. The key skills of pharmacy health coaches was a topic of interest, though the literature did not contain sufficient information for this purpose, the lack of a grounded definition may have been the reason for this.

Practical Implication

The lack of a grounded definition of health coaching has made it difficult to compare studies and draw practical implications for practice within pharmacy. This systematic review provides a logical process and analysis towards a clear definition of pharmacy health coaching which can be used as the basis for both further research and the potential introduction of coaching professional services by pharmacists. The results bring forward a means of improved patient care and health outcomes. The definition, although specific, is flexible enough to be used by other health professionals for the purpose of health coaching.

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Conflicts' of Interest

The authors declare that there is no conflict of interest.


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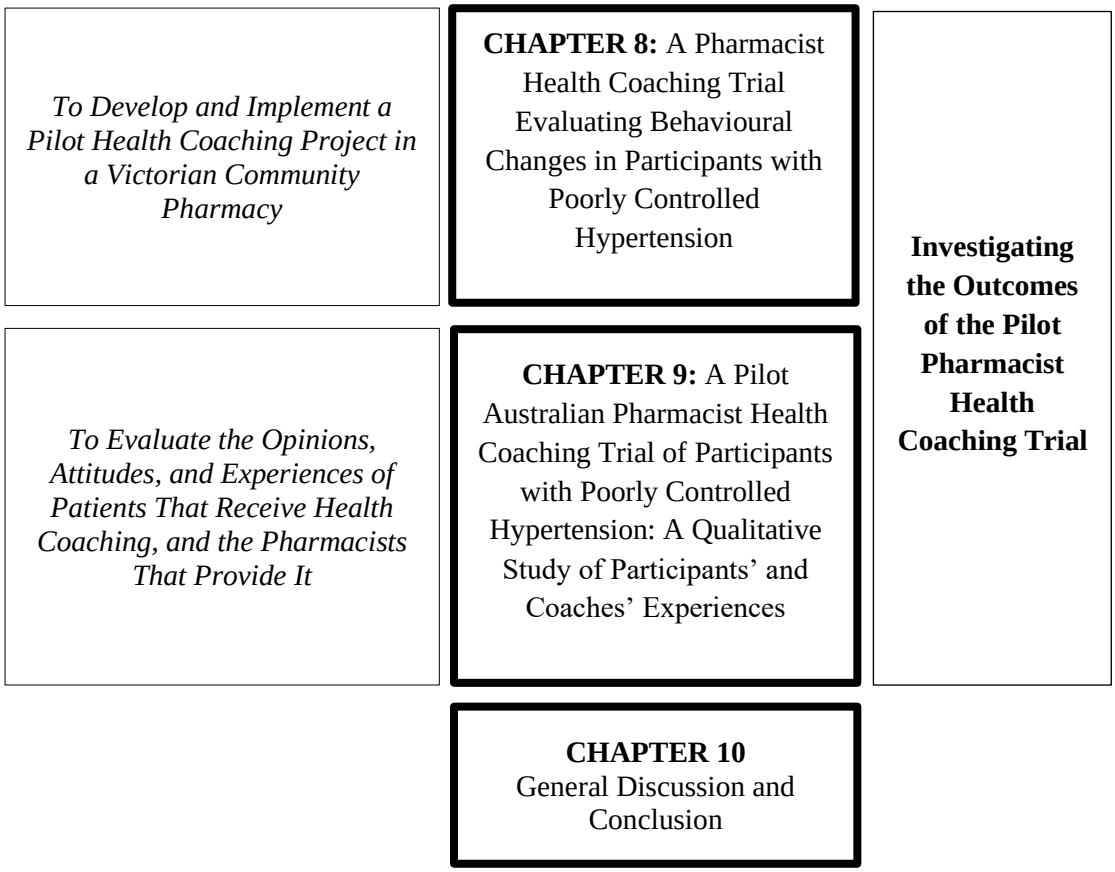
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CHAPTER 3

Competencies and Training of Health Professionals Engaged in Health Coaching: A Systematic Review

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Contributor	Statement of contributions
Singh, H. K	Literature searching and screening of titles (100%) Screening of abstracts (50%) Review and analysis of data (70%) Drafting and editing of paper (70%)
Kennedy, G. A	Review and analysis of data (10%) Drafting and editing of paper (10%)
Stupans, I	Screening of abstracts (50%) Review and analysis of data (20%) Drafting and editing of paper (20%)

Chapter Overview

Although health coaching is integrated within the key competences of nurses and nurse practitioners, from AUS, CAN, and the USA, it is not included, as part of the competency framework for other health professions. Furthermore, existing literature about health coaching has not outlined the competencies enabling health coaching. Although several international coaching organisations have defined the competencies for coaches, they have disregarded the differences in the expertise required amongst the distinct types of coaches such as sports and business coaches, as opposed to health coaches.

This chapter builds on the findings of chapter 2 and uses the grounded definition to identify literature, which specifically refers to primary health professionals who health coach. The skills, knowledge, attitudes, and attributes of these professionals in the role of health coaches are identified to compile the competencies required for health professionals to health coach.

Contribution to Practice

This systematic review derives nine key competencies that encompass the skills, knowledge, attitudes, and attributes of primary health professionals who engage in health coaching.

These results could assist clinicians and professional organisations in developing evidence-based health coach training programs. The review also draws attention to the identification of specific competencies for health professionals who provide health coaching.

Abstract

Objective: A systematic review was undertaken to evaluate the competencies of primary health care professionals who are engaged with health coaching patients with chronic health conditions.

Methods: The databases CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS were searched to identify peer-reviewed papers referring to the competencies of health professionals engaged in health coaching.

Results: Nine key competencies that health professionals met, and which resulted in successful patient outcomes from health coaching were identified. Comparisons of the core health coaching competencies to the competencies for coaches established by the International Coaching Federation (ICF) and European Mentoring and Coaching Council (EMCC) showed considerable overlap. However, the comparison also reiterated the need for competencies specific to health coaches to be made explicit.

Discussion: Health coaching has been shown to improve the health outcomes in patients with chronic health conditions. As such, there is a need to build an evidence-based competency framework specific to health coaches. At present, the lack of a competency framework on which to base health coach training could significantly affect the outcomes of patients receiving health coaching. Practical implications include improving regulation and quality of health coaching and more importantly, the health outcomes of patients receiving the service.

Keywords: behaviour change, competencies, health coaching, health care professionals, chronic health conditions

Introduction

Coaching is an emerging concept with established roots in sports, psychology, and business (Hayes & Kalmakis, 2007). Coaches help clients apply their personal resources and overcome obstacles in the pursuit of a mutually agreed-upon goal (Biswas-Diener, 2009). Recently, coaching has gained attention in the healthcare industry in the form of health coaching. Studies have shown that health coaching can help patients adopt healthy behaviours that can help prevent and manage several chronic health conditions (Kivelä et al., 2014; Lawn & Schoo, 2010; Olsen & Nesbitt, 2010; Singh et al., 2019).

Chronic illnesses are health conditions that are prolonged in nature, and although treated are lifelong. However, if detected and managed early, the health outcomes of people with chronic health conditions can be improved (Dowrick et al., 2005). Most people with chronic illnesses can find it difficult to manage their health condition as they lack understanding about disease progression and self-management(Jerant et al., 2005). Health coaching has resulted in an improvement in the health outcomes of patients with chronic diseases such as diabetes, hypertension, depression, and high cholesterol, as it assists their understanding of their health condition as well as their management through positive behaviour change (Singh et al., 2019).

Health coaching differs from other lifestyle improvement services. Typically, the counselling undertaken by health care professionals such as pharmacists, physical therapists, medical practitioners, and nurses is fast paced. It customarily involves “advice-giving” about clinical targets and expectations. This type of counselling has been described as having a rigid approach to health education and disease management, as it involves the health care provider instructing the patient what to do, taking little consideration of the patient’s personal goals and capacity for change (David & Bernard, 2018; Griffiths & Campbell, 2008; McNeilly, 2003; Singh et al., 2019; Vale et al., 2005). Although these health care professionals have the skills and sensitivity to discuss complex treatment and care issues with the patient, time constraints often impact the counselling that can be provided. In contrast, counselling provided by therapists and psychologists can be focused on the needs of the patient as these

professionals not only have training and qualifications within their field, but their practice is better equipped for this purpose (Bor et al., 2008).

In contrast, health coaching provided by health care professionals takes a patient-centred and collaborative approach to patients' management of their chronic health conditions. The health coach is a partner in the change process who actively listens while empowering the coachee in a non- judgmental manner based on the coachee's, rather than the health coach's concerns (David & Bernard, 2018). It is postulated that this switching between the health coach and health professional role can violate the coaching agreement (David & Bernard, 2018). However, the underlying concept of health coaching is that it is the role of the health coach to ensure that patients are educated about their health and guided towards setting realistic health goals (Singh et al., 2019; Wolever et al., 2011). It is the role of the health coach to improve patient health literacy through patient-centred communication, educational materials, and reinforcement, towards realistic goal setting (Sudore & Schillinger, 2009). Therefore, it would be imperative for a health professional to practice both roles concurrently. There have been several descriptions of health coaching reported in the literature, which has made it difficult to compare studies and evaluate the outcomes of health coaching interventions, but a recent paper has provided a grounded definition. Health coaching has been defined as a service that is provided to patients by health care professionals for the purpose of managing health. It involves a collaborative interaction between the patient and coach for the purpose of a behavioural change. This involves the patient setting self-centred goals and regular follow-up with the health coach. In this relationship, both the coach and patient are held accountable for the patient's health outcomes. It is the role of the coach to provide guidance, expert information, and facilitate the motivation of the patient to achieve their goals (Singh et al., 2019).

The theoretical foundation of coaching is based on psychological concepts (Kivelä et al., 2014). Several types of models and theories form the basis of behavioural change in coaching. Those most frequently referred to in the literature include the Transtheoretical Model of Change (TTM), and Social Cognitive Theory (SCT). Each theory is distinct; however, coaching recognises that individuals intrinsically learn in different ways, and thus the process could involve one or a combination of models or theories, which may complement one another (Rosenstock et al., 1988; Shearer et al., 2003). The behaviour change

process can also be supported through techniques such as Motivational Interviewing (MI), which involves facilitating a patient's underlying motivation towards a positive behaviour change (Simmons & Wolever, 2013).

Health coaching has been shown to improve the health outcomes of patients with chronic health conditions (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Wertz et al., 2012). A key question is- what are the competencies required for a professional to provide health coaching? Competencies in this context are multifaceted and dynamic concepts, encompassing skills, knowledge, attitudes, and attributes for the comprehensive practice of clinical care by primary healthcare professionals (Axley, 2008). Competency frameworks define expectations of accrediting boards and colleges and function to maintain the social contract between the public and practitioners (Verma et al., 2006). Derived from the competencies are enabling competencies. These statements describe what a person needs to be able to do to successfully perform their job. To meet a competency, an individual may need to integrate several enabling competencies (Pharmaceutical Society of Australia, 2016; Woodruffe, 1993).

Several coaching organisations have been established with the remit to regulate and accredit coaches, the organisations have developed a standardised competency framework that applies to all coaching professions (Jordan et al., 2015; Payne, 2017). However, these organisations do not consider the differences in the expertise required amongst the various professions that provide coaching, such as sports and business coaching, as opposed to health coaching (Mittelman, 2015).

The Association for Coaching (AC) is an independent and not-for-profit body dedicated to promoting best practice and raising the awareness of coaching standards globally. The AC competency framework contains nine competencies, which include establishing the coaching agreement and outcomes, and a trust-based relationship with the client, and designing strategies and actions (Association for Coaching, 2019).

The International Coaching Federation (ICF) represents its member coaches and aims to advance the profession by offering credentialing paths and guidelines for self-governance. ICF defines 11 core

competencies critical to the practice of professional coaching including a cluster of competencies, which facilitate learning and outcomes (The International Coaching Federation (ICF), 2019).

The European Mentoring and Coaching Council's (EMCC) purpose is to develop, promote, and set expectations for best practice in mentoring and supervising a coach. It has defined eight competencies for coaches and mentors. These include managing the contract and building the relationship (European Mentoring & Coaching Council (EMCC), 2019).

With respect to health coaching, the United States-based National Society of Health Coaches (NSHC) provides health coach training and certification for clinical healthcare practitioners and allied healthcare professionals (Huffman, 2019). The society provides evidence-based education and core competencies specifically for health coaches in the United States (US). There are 11 core competencies for health coaches, which include the use of evidence-based practice interventions and motivational interviewing (MI) (NSHC, 2049).

The National Board for Health and Wellness Coaching (NBHWC) endeavours to standardise coaching certification internationally. While this organisation has provided a job task analysis for health and wellness coaches, it has not provided a competency framework (Wolever et al., 2016; Woodruffe, 1993).

Coaching accreditation by many of the organisations often involves variations in brief and inconsistent training programs (Payne, 2017). The larger organisations, such as the EMCC and ICF have strived to standardise the credentialing process for coaches as well as developing baseline coaching competencies (Grant et al., 2010). Notably, the outcomes from the health coach training and certifications provided by each of the organisations have not been reported in peer-reviewed literature (Mittelman, 2015).

The aim of this paper is to identify the skills, knowledge, attitudes, and attributes associated with health coaching interventions and to compare these to the competencies established by the larger international coaching organisations — the EMCC and ICF for coaches. This will pave the way for training programs tailored specifically to health professionals as health coaches.

Methods

Search Strategy

The Literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Figure 3.1 shows the PRISMA- based article review process and illustrates each step of the literature search and study selection process. The electronic databases (CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS) were extensively and systematically searched to identify the scholarly sources related to health coaching involving primary care health professionals. Other references were also identified by examining the bibliographies of studies that met the eligibility criteria, and via hand searching. The database searches involved two stages (Table 3.1). In the first stage, the search strings focused on the skills, knowledge, attitudes, and training of primary care health coaches. The second stage focused only on the attributes of primary care health coaches. The database searches captured 218 non-duplicate citations; with a total of 18 papers meeting the eligibility criteria for inclusion in the systematic review. The outcomes of both search stages were collectively evaluated.

Table 3.1 Search Strings for Two-Stage Search

Date of Search

April 2018 **CINAHL search strategy**

#1. Search (health AND coaching)
#2. Search (skills OR knowledge OR attitudes OR training)
#3. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#4. Search (#1 AND #2 AND #3) filters: English; Peer Reviewed; Journal Article; Published Date 19500-2018
#5. Search (health AND coaching)
#6. Search (attitudes)
#7. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#8. Search (#5 AND #6 AND #7) filters: English; Peer Reviewed; Journal Article; Published Date: 19500-2018
#9. Search #4 AND #8

EMBASE search strategy

#1. Search (health AND coaching)
#2. Search (skills OR knowledge OR attitudes OR training)
#3. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#4. Search (#1 AND #2 AND #3) filters: English; embase OR medline;<1966-2018
#5. Search (health AND coaching)
#6. Search (attitudes)
#7. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#8. Search (#5 AND #6 AND #7) filters: English; English; embase OR medline;<1966-2018
#9. Search #4 AND #8

April 2018 PubMed search strategy

#1. Search (health AND coaching)
#2. Search (skills OR knowledge OR attitudes OR training)
#3. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#4. Search (#1 AND #2 AND #3) filters: Full text, Publication Date: 1950-20181; Humans, English
#5. Search (health AND coaching)
#6. Search (attitudes)
#7. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#8. Search (#5 AND #6 AND #7) filters: Full text, Publication Date: 1950-20181; Humans, English
#9. Search #4 AND #8

April 2018 Psych INFO search strategy

#1. Search (health AND coaching)
#2. Search (skills OR knowledge OR attitudes OR training)
#3. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#4. Search (#1 AND #2 AND #3) filters: Peer Reviewed; Humans; NOT (Home Care & Hospice AND Curriculum & Programs & Teaching Methods AND Developmental Disorders & Autism AND Personnel Management & Selection & Training AND Artificial Intelligence & Expert Systems AND Childrearing & Child Care AND Criminal Behaviour & Juvenile Delinquency AND Educational/Vocational Counselling & Student Services AND Group & Family Therapy AND Interpersonal & Client Centred & Humanistic Therapy AND Occupational & Employment Testing AND Rehabilitation AND Special & Remedial Education)Occupational & Employment Testing AND Physical & Somatoform & Psychogenic Disorders AND Community & Social Services AND Developmental Disorders & Autism) NOT Animal NOT (Interview AND
#5. Search (health AND coaching)
#6. Search (attitudes)
#7. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#8. Search (#5 AND #6 AND #7) filters: Peer Reviewed; Humans; NOT (Home Care & Hospice AND Curriculum & Programs & Teaching Methods AND Developmental Disorders & Autism AND Personnel Management & Selection & Training AND Artificial Intelligence & Expert Systems AND Childrearing & Child Care AND Criminal Behaviour & Juvenile Delinquency AND Educational/Vocational Counselling & Student Services AND Group & Family Therapy AND Interpersonal & Client Centred & Humanistic Therapy AND Occupational & Employment Testing AND Rehabilitation AND Special & Remedial Education)Occupational & Employment Testing AND Physical & Somatoform & Psychogenic Disorders AND Community & Social Services AND Developmental Disorders & Autism) NOT Animal NOT (Interview AND
#9. Search #4 AND #8

April 2018 SCOPUS search strategy

#1. Search (health AND coaching)
#2. Search (skills OR knowledge OR attitudes OR training)
#3. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#4. Search (#1 AND #2 AND #3) filters: Published (All years to Present), Document type (Article), Access type (All)
#5. Search (health AND coaching)
#6. Search (attitudes)
#7. Search (general practitioner OR nurse, OR nurse practitioner OR allied health professional OR pharmacist OR dentist OR aboriginal health worker OR health professional OR primary health care)
#8. Search (#5 AND #6 AND #7) filters: Published (All years to Present), Document type (Article), Access type (All)
#9. Search #4 AND #

Selection Criteria

Papers were included in the literature review if they were (1) published sources; (2) peer-reviewed; (3) contained text that stated the skills, knowledge, attitudes, attributes, or training of a primary care health professional as a health coach; defined by the grounded definition of health coaching; primary health care professionals included general practitioners, nurses, nurse practitioners, midwives, pharmacists, dentists, allied health professionals; (4) published between 1950-2018 (present). The start date for the

search aligned with the emergence of the concept of "health coaching" in the early 1950s (Leung et al., 2012; Singh et al., 2019).

Sources were excluded if they were (1) published in a language other than English; (2) any source other than a peer-reviewed journal article; (3) did not contain the skills, attitudes, knowledge, or training required of a primary care health coach; (4) did not describe health coaching within the role of a primary health care professional; (5) did not include the word "health coaching"; (5) the full text could not be found; (6) grey literature.

Data Extraction and Analysis

The studies found from the databases were downloaded, and a single researcher initially screened the titles and abstracts. Subsequently, two researchers independently reviewed the full-text copies of articles that passed the initial screening process. The third researcher was consulted when a consensus decision about the eligibility of a paper could not be reached by the first two researchers.

Each paper was read to extract the following information about the health coach mentioned in the piece, profession, skills, knowledge, attitudes, attributes, and training information. This information was compiled into a table using Microsoft Word (Table 3.2). The table provides a clear view of the common themes and characteristics as well as a review of other unexpected findings. Once extracted the information was grouped based on the profession of the health coach. The data fields are in line with the aims of this review and included (1) the profession of the health coach referred to in the paper; (2) the skills, knowledge, and attributes of the health coach; and (3) the training of the health coach. Subsequently, qualitative analysis of the information in Table 3.2 was used to investigate each of the data fields to explore the emergence of recurring concepts among and between the health professions. All papers showed that health coaching led to positive health outcomes for patients. This allowed the development of key competencies classified under the main headings of knowledge, skills, attitudes, attributes (Table 3.3). Comparisons were made between the competencies of each health professional group as health coaches. The health coaching competencies were also compared to the competencies established by the EMCC and ICF for coaches. Although the purpose of the review was not to evaluate

the outcomes of health coaching, as part of our analysis we noted that all studies reported a successful health coaching intervention in a chronic health condition.

Assessment of Study Quality

Given the diverse study designs included in this review, the quality assessment methods traditionally used to assess effectiveness would not be suitable. However, the quality assessment of the papers included in the literature review was considered according to the Cochrane Review Handbook for Systematic Review of Interventions (Higgins & Green, 2011). Considering that, the study outcomes were not an initial selection strategy we considered the risk of bias of each paper as low. Furthermore, given that the concept of health coaching is growing, we regarded the inclusion of all papers in our systematic review as important.

Results

Search Results and Study Characteristics

The database searches captured 218 non-duplicate citations (Figure. 3.1). After reviewing the titles and abstracts, 81 papers were considered potentially relevant, and the full text of each of these was then reviewed. The reference list of the full-text articles were also reviewed for other relevant sources, three papers were found in this way and one from hand searching. Of these, 66 were not relevant or did not mention health coaching provided by a primary care health professional and one was a duplicate. A total of 18 papers met the eligibility criteria and were thus included in the systematic review and are summarised in Table 3.2.

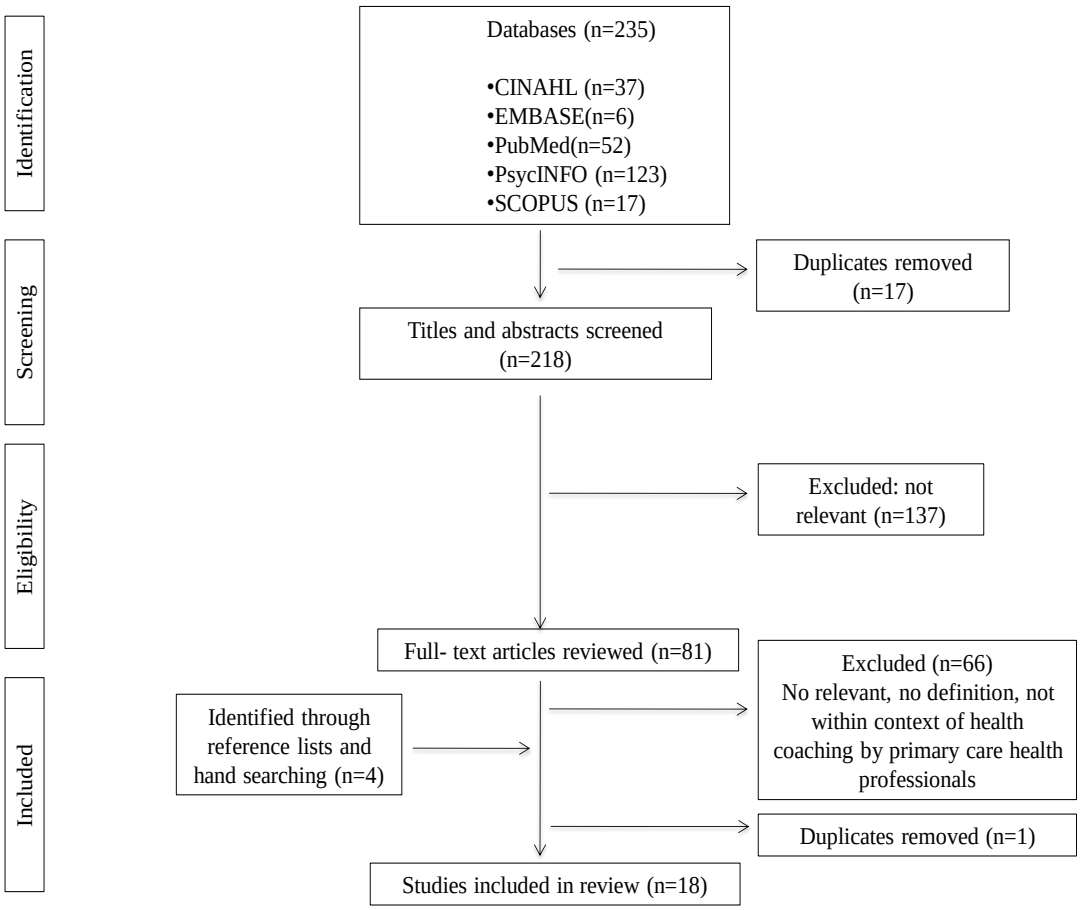


Figure 3.1. PRISMA Flow Chart of the Literature Search and Study Selection

Characteristics of study samples

Nurses undertook eight of the eighteen health coaching studies. These studies were further classified as involving, specialised (Ammentorp & Kofoed, 2010; Hayes & Kalmakis, 2007; Hayes et al., 2008; Romain-Glassey et al., 2014; Swerczek et al., 2013; Walker et al., 2011), and non-specialised nurses (Bennett et al., 2005; Fahey et al., 2008; Kaplan et al., 2017; Leung et al., 2012; Nesbitt et al., 2014; Vale et al., 2005). Specialised nurses were those that had undergone extensive training, had greater expertise than the non-specialised nurses had, and included nurse practitioners, advanced practice nurses, forensic nurses, paediatric nurses, and neonatal nurses. Non-specialised nurses included registered nurses, graduate nursing students, and nurse practitioner students. Pharmacists as health coaches (O. H. Brook et al., 2003b; Leung et al., 2012; Lonie et al., 2017) were referenced in three

papers, while only one paper referred to physical therapists (Nessen et al., 2014). Two papers made a broad reference to primary health professionals as health coaches (Lawn & Schoo, 2010; Miller, 2010).

Key Findings in Health Coaching by Primary Care Health Professionals

The summary of characteristics and findings from the research papers included in this systematic review is given in Table 3.2. Comparisons of these findings allowed inferences to be made between and within the professions captured in the literature. This allowed characteristics to be grouped and classified as being captured within domains.

A representation of this is shown in Table 3.3; it displays the individual professions of the health coaches and their characteristics, with a focus on domains, capturing these as core competencies that incorporate the skills, knowledge, attitudes, and attributes of a health coach.

Skills of a Health Coach

All eighteen articles included in the review were identified as having extractable data on health coaching skills and knowledge (Table 3.2). The characteristics under which they have been classified include (1) "communicates effectively for the delivery of patient-centred care"; (2) "demonstrates team and leadership skills to optimise health care" and (3) "demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice" all which are outlined in Table 3.

The first competency includes skills that include listening, questioning, motivating, and encouraging the patient, providing support and feedback as well as having regular follow up with the patient to monitor their progress. Demonstrating team and leadership skills as the second competency, entails the ability of the primary health care professional health coach, to collaborate with other members of the patient's multidisciplinary care team and with the patient individually to facilitate the patient setting self-centred goals. The third competency includes a health professional's commitment to ongoing education, the ability to find relevant resources, as well as the ability to practice previously learned knowledge.

Comparisons made between the individual professional groups showed that to be a competent health coach the first and second competency were imperative as they were discussed in all papers, yet the third competency skills set were not. The skills characterised under this competency were only mentioned in the articles that included medical practitioners, specialised nurses, and non-specialised nurses and health professionals in general as the health coach.

Attributes of the Health Coach

The attributes embodied by the health coaches were extracted from the papers. The analysis revealed six desirable attributes, these were categorised within the following competencies (4) "demonstrates tolerance and respect for individuals and groups from diverse backgrounds"; (5) "demonstrates professional behaviour and accountability"; (6) "demonstrates the ability to utilise empathy when communicating with patients";(7) "demonstrates confidence"; (8) "identifies areas for development to improve competency" and (9) "works systematically and coordinates activities" (Table 3).

The fourth competency referred to only for pharmacists and specialised nurses and included attributes of the health coach such as being respectful by putting aside personal differences, and not imposing their own beliefs and values on the patient, but rather acknowledging and respecting theirs.

The fifth competency "demonstrates professional behaviour and accountability" is the sum of two parts. Firstly, it includes attributes that were defined as behaviours and skills that enabled the health coach to do their job well and achieve satisfactory outcomes for the patient. Secondly, it also includes the health coach being accountable to the patient. The first part of this attribute appeared to be autogenous to pharmacists, medical practitioners, and non-specialised nurses as health coaches, while the second part, that is, being accountable, was solely quoted in an article that examined pharmacists as the health coach (Lonie et al., 2017).

The sixth competency "ability to utilise empathy when communicating with patients" included attributes describing emotive communication, such as being; comfortable during silence; focusing on patient concerns; speaking slowly and simply and being empathetic. This attribute appeared within all professional groups (Bennett et al., 2005; O. H. Brook et al., 2003b; Fahey et al., 2008; Kaplan et al.,

2017; Leung et al., 2012; Lonie et al., 2017; Nesbitt et al., 2014; Neuner-Jehle et al., 2013; Vale et al., 2005), excluding physical therapists (Nessen et al., 2014).

The seventh competency cited only for physical therapist health coaches (Nessen et al., 2014), "demonstrates confidence"; included desirable attributes that involved having faith in ones' self, including the ability to cope in stressful situations. The ability to identify areas for development to improve practice, the eighth competency, included attributes that involved being able to reflect on one's coaching skills and practice, as a means of improving them. From the literature, only two health professional groups as coaches were found to include this competency: pharmacists (Lonie et al., 2017), and specialised nurses (Ammentorp & Kofoed, 2010; Romain-Glassey et al., 2014). The ninth competency, only referenced in the paper referring to physical therapists as health coaches (Nessen et al., 2014), involves demonstrating the ability to pre-arrange coaching and materials before sessions, to ensure that contacts are at ease during the intervention.

Training of Health Coaches

The extent and duration of health coach training provided to the primary health professionals differed. Of the eighteen articles reviewed, none referred to the competency frameworks established by the international coaching bodies when training health professionals to health coach. Fourteen papers referred to training of the primary health professional or the potential thereof to health coach (Ammentorp & Kofoed, 2010; Bennett et al., 2005; Fahey et al., 2008; Hayes et al., 2008; Kaplan et al., 2017; Lawn & Schoo, 2010; Leung et al., 2012; Lonie et al., 2017; Nesbitt et al., 2014; Nessen et al., 2014; Neuner-Jehle et al., 2013; Swerczek et al., 2013; Vale et al., 2005; Walker et al., 2011), while two papers (Miller, 2010; Romain-Glassey et al., 2014) made no mention of training. Health coaching was mentioned only once as a domain within the competency framework of a health professional discipline i.e., nurse practitioner educational competency of the United States National Organisation of Nurse Practitioner Faculties (NONPF).

Comparisons amongst the health coaching articles showed that the training periods were highly variable. Some studies referred to a health coach training period as short as two hours (Kaplan et al.,

2017; Leung et al., 2012), while the longest training period reported was four weeks (Nesbitt et al., 2014). Training for early career primary health professional student health coaches which included pharmacy, medical, nursing, and nurse practitioner students referred to communication skills training which covered the concepts and processes of MI. Education and guidance on the principles and techniques of MI were also provided in three additional articles (Bennett et al., 2005; Fahey et al., 2008; Leung et al., 2012) while one other assumed that the health professionals already had an understanding of the skills of MI (Miller, 2010). Education regarding the psychological concepts of behaviours change was provided in five papers; three referred to the transtheoretical model of change (TTM) (Bennett et al., 2005; Hayes et al., 2008; Neuner-Jehle et al., 2013)

while two referred to the social cognitive theory (SCT) of behaviours change (Hayes et al., 2008; Nessen et al., 2014). The assumption that the health professionals already had competency in the theories of change was made by one article (Hayes et al., 2008). Another discussed that cognitive-behavioural theories of change have a clear evidence base and that their use in health coaching would be advantageous but made no mentioning of the training necessary to educate health professionals about this (Lawn & Schoo, 2010).

Table 3.2. Characteristics and Findings of Studies Included in the Review

Author	Profession	Skills of health coach	Knowledge of health coach	Attitudes of health coach	Attributes of health coach	Training of health coach
Hayes and Kalmakis (2007)	• Nurse Practitioner	• Help patient identify goals meaningful to them • Empower patients • Support patient • Patient-focussed • Facilitates learning in client • Encourages • Accountability in decisions making towards goal attainment • Inspire belief • Communication strategies	• Coaching is a NP educational competency of the National Organisation of Nurse Practitioner Faculties (NONPF)		• Warm • Empathetic • Optimistic • Genuinely love people • Desire to help people reach goals • Responsible • Accepts client unconditionally • Avoids judgment and imposing his/her own beliefs	• States that previous studies do not describe coach training or provide examples of coaching communication
Neuner-Jehle et al. (2013)	• General Practitioner (GP)	• Good Communication skills • Good questioning technique • Adapt to patient needs		• Shared responsibility for patient's health with the patients themselves made GPs feel relieved. • Health coaching empowers GPs		• Communication training is a mandatory part of the programme. • Training is stepwise: a. Sensitisation workshops b. Skills training course c. Feedback sessions to share experiences
Lonie et al. (2017)	• Pharmacist	• Provide support, education, and feedback. • Enhance client self-awareness, motivation, accountability, and self-efficacy. • Encourage patients. • Build a partnership with the patient. • Identify patient needs, values, and interests.	Health knowledge	•	• Responsible • Respectful • Connects with patients. • Display empathy. • Comfortable during silence • Puts aside personal issues to focus on patient. Commitment to personal development	• Pharmacists have significant experience and expertise, and that the role of an educator is not foreign to pharmacists. • Pharmacists can be trained in health coaching using a combination of didactic and interactive learning methods

		• Adapt health coaching to suit individuals. • Provide continued care. • Provide emotional and social support. • Link health coaching to clinical care • Listen to the patient. • Questioning skills				
Ammentorp and Kofoed (2010)	• Neonatal Nurse	• Anticipate patient reactions. • Recognise and respond to patient cues. • Reflect on the thought's feelings and behaviours of patients. • Assess patients' performance. • Understand the perspective of others. • Ability to encourage clients. • Ability to listen empathetically. • Ability to express understanding and support. • Able to explore the experiences, feelings, and expectations of the parents	•	Nurses have greater self-efficacy after having participated in the coaching course and were better able to meet the needs of the parents	• Active listener • Share perceptions. • Appropriate questioning • Self-reflection • Non-judgment • Empathy • Exemplary communication skills	• A three-day health coach-training program. The course consisted of short lectures, dialogue, and reflection. Also involved role-plays

Vale et al. (2005)	• 2x dietician • 4x nurses	• Individualise coaching to patient	Experience in working with cardiovascular disease patients	•	•	• Part-time training program provided for 2 weeks by a trained coach
Hayes et al. (2008)	• Nurse Practitioner (NP)	• Motivate patients. • Encourage patients. • Guide patients to plan and achieve their health goals. • Builds collaborative relationship with the patient. • Strong communication skills • Assess patients' stage of change. • Promote patient self-care. • Recognise patient autonomy. • Recognise patient differences and can adapt coaching accordingly.	• Clinical practice guidelines of diabetes • Coaching is a competency of the National Organisation of Nurse Practitioner Faculties (NONPF)		• Good patient/ provider communication • Being empathetic • Encouraging patients • Supportive • Some nurses may practice coaching intuitively. • Respectful • Trustworthy	• Proposes that nurse practitioners (NP) and NP students could be trained to be a diabetes health coach. Training would be provided by a certified coach, a diabetes educator, NP faculty researchers, and endocrinologists. • Training could include recent diabetes research, current approaches to diabetes management, evaluation of diabetes guidelines, and introduction to the theories of behaviour change. • Group discussion would be valuable during the training. • Continuing education could lead to coaching certification

		• Provide feedback to patients on progress. • Measure biological parameters (e.g., HbA1c) to assess coaching outcomes				
O. H. Brook et al. (2003b)	• Pharmacist	• Adequate communication skills	• Medication monitoring • Drug/ medication knowledge/information	• Suggests the pharmacists could be concerned about the time that coaching could take- away. from other roles/ responsibilities/ duties	• Communication	• Pharmacists are already well equipped with communication skill; they do not require further training
Kaplan et al. (2017)	• Medical student • Nurse practitioner student	• Set short- and long-term health goals for patients. • Ability to motivate patients. • Work collaboratively with other members of the patient's health care team. • Complete health coaching phone calls • Oral presentation skills • Develop team-based care plans. • Follow-up with patient weekly		•	• Professionalism • Negotiation skills • Communication skills	• Students attended a 2-hour training session. Training included MI skills and scripts for scenarios involving chronic illness. • Students in the second period of the study shadowed the students from the first period as a means of refreshing training and observational learning
Nessen et al. (2014)	• Physical Therapists	• Guide goal setting • Switch between health professional role and health coach role. • Tailor coaching to individual needs • Organise meetings with the client	Knowledge of the maintenance and treatment of arthritis	• Physical therapists initially felt stressed when providing coaching. This diminished with time as they gained experience. • Coaching brought forward several challenges and experiences	• Cope in stressful/demanding situations • Confidence • Organised	• A 6-day training course was provided to physical therapists. Training included: a. Coaching skills b. Strategies to support health-enhancing behaviour. c. Practice coaching •

Bennett et al. (2005)	• Nurses	• Guide coaching sessions with the client • Individualise coaching. • Support participant progress toward their chosen goal • Follow-up with client	Knowledge of an array of medical conditions experienced by older persons	•	• Communication skills	• Nurses were provided with 24 hours of MI coach training by two registered nurses
Fahey et al. (2008)	• Nurse	• Encourage patients. • Facilitate goal setting in patients. • Use MI • Recognise the stage of the change a patient is in • Support patient self-efficacy • Rephrase questions or information to assist patients in understanding	• Cancer pain management knowledge		• Empathetic • Assertive communication skills • Active listening •	• An advanced practice oncology nurse with expertise in cancer pain management was trained in TTM and MI. • Training included supervision, practice, review of calls, and feedback
Walker et al. (2011)	• Practice Nurse	• Motivate patients to make lifestyle changes and adhere to medications. • Empower patients. • Monitor patients' biochemical targets. • Build a professional coaching relationship with the patient. • Provide personalised care	• Practice guidelines for type 2 diabetes		• Personable • Approachable • Easy going	• Practice nurses were trained over 2 days to deliver telephone coaching sessions. Training included didactic information on nutrition exercise testing protocols, medication adherence, optimal risk factor testing protocols, and target levels.
Romain-Glassey et al. (2014)	• Advance Practice Nurses	• Promote effective learning. • Empower patient. • Form a partnership with the client. • Help a patient develop the knowledge and skills needed to overcome fear.	• Professional experience • Commitment to continuing education. • Understanding of the professional codes of conduct and standards from the general discipline		• Emotional maturity • Interpersonal skills • Communication skills • Reflective practice • Self-confidence Respect for persons dignity and integrity	•

		• Build shared understanding of circumstances. • Provide patient-centred coaching. • Refer to relevant resources when necessary. • Use a family perspective				
Lawn and Schoo (2010)	• Health professionals	• Tailor coaching to individual needs • Use the skills of MI and other cognitive behavioural approaches	• An understanding of MI and other cognitive behavioural approaches. •		• Takes an interactive role in patient care.	• Training could involve a workshop run over 1-2 days.
Leung et al. (2012)	• Nurse practitioner students • Medical students • Pharmacy students •	• Follow-up with the client regularly • Follow a standardised coaching protocol. • Be able to rate patients' achievements. •	•	• Strong interest in patient interaction Coaches reported "never" or "sometimes" getting frustrated during coaching study	• Counselling skills • Clinical experience • Ability to communicate with the patient: -Speaks slowly and simply -Asks open-ended questions -Asks the patient to summarise -Speaks in lay terms -Focuses on patient-relevant concerns in hypertension -Ability to explain difficult concepts to a patient in innovative ways e.g., Drawing pictures • -Focus on patient-centred goals	• Two hours of interactive training from a multidisciplinary team of physicians, nurses, and psychologists • Training includes concepts of MI, idiographic goal setting, cultural considerations, and hypertension terminology
Nesbitt et al. (2014)	• Graduate nursing students	• Perform MI • Ask open-ended questions. • Reflect on own practices. • Undertake continuing education	• Core competencies for nurses include coaching	• Of the nursing students, 100% reported that they valued learning MI and that it was useful	• Standard nursing skills	• Nursing students undertook a health promotion/ clinical prevention course. It involved exposure to MI via class lecture, discussion, videotaped practice, experiential application, and independent readings. • Nurses were required to participate in online

						discussions, videotape themselves, and present finings. • The students were encouraged to practice MI at home and at work
Swerczek et al. (2013)	• Paediatric nurses	• Communicate effectively with children. • Provide advice and guides client. • Provide non-directive support. • Commitment to ongoing education • Follow a protocol. • Follow up with client. • Move from a directive care approach to a non-directive counselling approach. • Guide client on decision making rather than providing own reasons and solutions. • Partner with health care providers • Establish shared decision making with the client and sets mutual goals. • Empower client	• Paediatric telephone triage experience and ability to manage patients during an acute asthma exacerbation	•	• Commitments to patient care and follow up with the parents at odd hours	• Coach training is composed of two 90-minute group sessions. Course content included an introduction to asthma coaching and the conceptual model as well as a review of documentation expectations. • Simulated phone interviews were conducted for practice
Miller (2010)	• Health professionals	• Ask open-ended questions. • Guide individuals to self-monitor their performance • Follow-up with the client through email, telephone, or face-to-face	• An understanding of MI and how to do it.		• Are a credible source of information.	

		• Assist individual to reformulate goals when unmet. • Identify barriers to change. • Offer additional information about the behaviour and clarifies misconceptions. • Help individual find relevant resources. • Educate individual about how to undertake problem-solving approach. • Anticipate challenging or distressing situations. • Help individual plan for difficult times				

Table 3.3. Comparison of Desirable Characteristics of Primary Care Health Coaches

	Knowledge and Skills of a health coach			Attributes of a health coach					
Profession	(1) Communicates effectively for the delivery of patient centred care	(2) Demonstrates team and leadership skills to optimise health care	(3) Demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice	(4) Demonstrates tolerance and respect for individuals and groups from diverse backgrounds	(5) Demonstrates professional behaviour and accountability	(6) Demonstrates the ability to utilise empathy when communicating with patients	(7) Demonstrates confidence	(8) Identifies areas for development to improve competency	(9) Works systematically and coordinates activities
Pharmacists (O. H. Brook et al., 2003b; Leung et al., 2012; Lonie et al., 2017)	✓	✓		✓	✓	✓		✓	
Physical therapist (Nessen et al., 2014)	✓	✓					✓		✓
Medical practitioners (Kaplan et al., 2017; Leung et al., 2012; Neuner-Jehle et al., 2013)	✓	✓	✓		✓	✓			
Specialised nurses (Ammentorp & Kofoed, 2010;	✓	✓	✓	✓	✓	✓		✓	

Hayes & Kalmakis, 2007; Hayes et al., 2008; Romain-Glassey et al., 2014; Swerczek et al., 2013; Walker et al., 2011)						
Non-specialised nurses (Bennett et al., 2005; Fahey et al., 2008; Kaplan et al., 2017; Leung et al., 2012; Nesbitt et al., 2014; Vale et al., 2005)	✓	✓	✓		✓	✓
Health professionals (Lawn & Schoo, 2010; Miller, 2010)	✓	✓	✓			✓

Comparison of ICF Core Competencies to Health Coaching Competencies

Although none of the papers referred to the ICF core competencies, comparisons made between the health coaching competencies and the ICF core competencies showed significant similarity (Table 3.4), though ICF core competencies made no mention of leadership skills or the need to work collaboratively as a team to improve client outcomes. They also did not mention confidence or the need to respect and treat clients from all backgrounds equally.

Comparison of EMCC Competence Framework to Health Coaching Competencies

Even though the EMCC framework was not mentioned in the reviewed articles, the analysis showed an overlap between the health coaching and EMCC competencies (Table 3.5). However, the EMCC framework made no mention of the need for professional behaviour or accountability of the coach or the demonstration of confidence during the coaching relationship.

Table 3.4. Comparison of ICF Core Competencies to Health Coaching Competencies

Domain	Knowledge and skills required to health coach			Attributes required to health coach					
Competency	(1) Communicates effectively for the delivery of patient-centred care	(2) Demonstrates team and leadership skills to optimise health care	(3) Demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice	(4) Demonstrates tolerance and respect for individuals and groups from diverse backgrounds	(5) Demonstrates professional behaviour and accountability	(6) Demonstrates the ability to utilise empathy when communicating with patients	(7) Demonstrates confidence	(8) Identifies areas for development to improve competency	(9) Works systematically and coordinates activities
Setting the foundation									
1. Meeting ethical guidelines and professional standards'	✓								
2. Establishing the coaching agreement	✓					✓			
Co-creating the relationship									
3. Establishing trust and intimacy with the client	✓					✓			
4. Coaching presence	✓								

Communicating effectively						
5. Active listening	✓			✓		
6. Powerful questioning	✓					
7. Direct communication	✓			✓		
Facilitating learning and results						
8. Creating awareness		✓				
9. designing actions					✓	
10. planning and goal setting						✓
11. managing progress and accountability			✓			

Table 3.5. Comparison of EMCC Competence Categories to Health Coaching Competencies

Domain	Knowledge and skills required to health coach				Attributes required to health coach				
Competency	(1) Communicates effectively for the delivery of patient-centred care	(2) Demonstrates team and leadership skills to optimise health care	(3) Demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice	(4) Demonstrates tolerance and respect for individuals and groups from diverse backgrounds	(5) Demonstrates professional behaviour and accountability	(6) Demonstrates the ability to utilise empathy when communicating with patients	(7) Demonstrates confidence	(8) Identifies areas for development to improve competency	(9) Works systematically and coordinates activities
1.Understanding self	✓		✓	✓		✓		✓	
2. Commitment to self-development								✓	
3. Managing the contract	✓	✓							✓
4. Building the relationship		✓		✓		✓			
5. Enabling insight and learning	✓								
6. Outcome and action orientation						✓			

7. Use of models and techniques	✓	
8. Evaluation	✓	✓

Discussion

Chronic health conditions are a leading cause of morbidity and mortality unless they are appropriately managed by patients and health professionals (Dowrick et al., 2005). Services such as health coaching can assist patients to better understand and manage their chronic health conditions through positive behaviour change (Singh et al., 2019). Establishing competencies specific to the practice of health coaching which are associated with successful patient outcomes is imperative. The following competencies for health professionals as health coaches were identified from this review (1) communicates effectively for the delivery patient-centred care; (2) demonstrates team and leadership skills to optimise health care; (3) demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice; (4) demonstrates tolerance and respect for individuals and groups from diverse backgrounds; (5) demonstrates professional behaviour and accountability; (6) demonstrate the ability to utilise empathy when communicating with patients; (7) demonstrates confidence; (8) identifies areas for development to improve competency; (9) works systematically and coordinates activities.

Although most papers included in this systematic review mentioned some degree of training provided to the primary health professionals to perform health coaching, not one referred to the competencies established by the international coaching organisations.

From the literature, the concepts, techniques, and information covered during the training sessions differed. Despite this, the most important skills gained from the health coach training were underpinned by the first "communicates effectively for the delivery of patient-centred care" and second "demonstrated team and leadership skills to optimise health care" competencies.

Surprisingly, some of the articles included in this review made no mention of the training provided to the health professionals to be a health coach (Miller, 2010; Romain-Glassey et al., 2014). However, all the papers revealed that health coaches met the first two competencies. This suggests that these skills must be an essential part of a health professional's educational training and that inclusion of these specific competencies within a training course is redundant though could be recapped. Although the

purpose of this review was not to evaluate the outcomes of health coaching, we noted that all studies reported successful health coaching interventions. As such, we are confident that each of the health coaches were able to demonstrate these skills to improve the patients' health outcomes. There was not one paper that included all the competencies of health coaches, and no single paper discussed all the attributes encompassed within the fourth to ninth competencies. Notably, the attributes of the fourth competency; "demonstrates tolerance and respect for individuals and groups from diverse backgrounds", were only cited in the papers that referred to pharmacists and specialised nurses as the health coach. However, these attributes are fundamental to all health professionals. As such, under the assumption that health professionals are expected to possess these attributes, they may have been less frequently mentioned throughout the literature and thus absent from many of the health professional groups in Table 3.3.

We saw the emergence of two communication types, these were exemplified in the first and the sixth competency; "communicates effectively for the delivery of patient-centred care" and "demonstrates the ability to utilise empathy while communicating with patients/ clients", respectively. The first competency involved communication skills that were inherent and recapped during training; these skills were displayed by all health professional groups, while the sixth competency involved communication that was emotionally driven.

Several studies alluded to a proforma or protocol that the health professionals could use to guide health coaching both during and at the completion of training (Bennett et al., 2005; O. H. Brook et al., 2003b; Fahey et al., 2008; Hayes & Kalmakis, 2007; Leung et al., 2012; Lonie et al., 2017; Miller, 2010; Nessen et al., 2014; Neuner-Jehle et al., 2013; Swerczek et al., 2013; Vale et al., 2005; Walker et al., 2011). This suggests that even in papers that made no mention of training (Romain-Glassey et al., 2014) the health professional coach was still able to indirectly refresh these communication skills while being guided through their health coaching sessions. Professionalism was captured within the fifth competency. Considering that only one health profession *per se* failed to mention this competency, it could be that professionalism too is considered an underpinning attribute and thus was not explicitly mentioned. Furthermore, this attribute need only be briefly referred to during health coach training to

reiterate its importance. An additional component of the fifth competency was the health coach's ability to "demonstrate accountability" to the patient. Considering this competency was only referred to once in the cited papers (Lonie et al., 2017) it may not be considered as an essential competency for health coaching, though more fittingly could be synergistic, which involves a partnership between the patient and health coach, whereby both are accountable for the patient's outcomes.

The remaining competencies; confidence and being organised, were mentioned only in the paper referring to physical therapists as health coaches (Nessen et al., 2014). The ability of a health coach to portray confidence to patients/clients can make some individuals feel at ease knowing they are in competent hands. On the contrary, however, a health professional's confidence can occasionally depict them as unapproachable and arrogant. Furthermore, health professionals should be advised to have an organised yet fluid approach to health coaching to maintain a predictable structure to health coaching sessions allowing clients to feel comfortable and safe yet also allow them to bring up other points of discussion.

The nine competencies for health coaches were compared to the ICF and EMCC competencies for coaches, showing a considerable overlap. Both coaching organisations, however, did not refer to the need for confidence within their coaching competencies. This suggests that demonstrating confidence is a competency specific to health coaches, reiterating the need for competencies specific to the practice of health coaching.

The ICF competencies did not refer to the team or leadership skills required to coach as well as the tolerance and respect for individuals from diverse backgrounds. There was no association between the EMCC core competencies and the fifth health coaching competency; "demonstrates professional behaviour and accountability". Surprisingly, though both accountability and professionalism are the foundation of coaching interventions (Huffman, 2016), the absence of this health coaching competency proposes that it is specific to health coaches. Demonstrating team and leadership skills are important in achieving patient-centred care and health improvement but may not be necessary with other types of coaching.

This research has yielded nine competencies that health professionals met, and which resulted in successful patient outcomes from health coaching. These are the skills, knowledge, attitudes, and attributes, which ideally should be met by a health coach. This research has also demonstrated a need for competencies specific to the practice of health coaching and the lack of evidence and scepticism towards the certifications and training provided by the larger international coaching bodies. However, a correlation between the health coaching competencies and those from the larger international coaching organisations has been observed and confirms that there are similarities between the practices of both services.

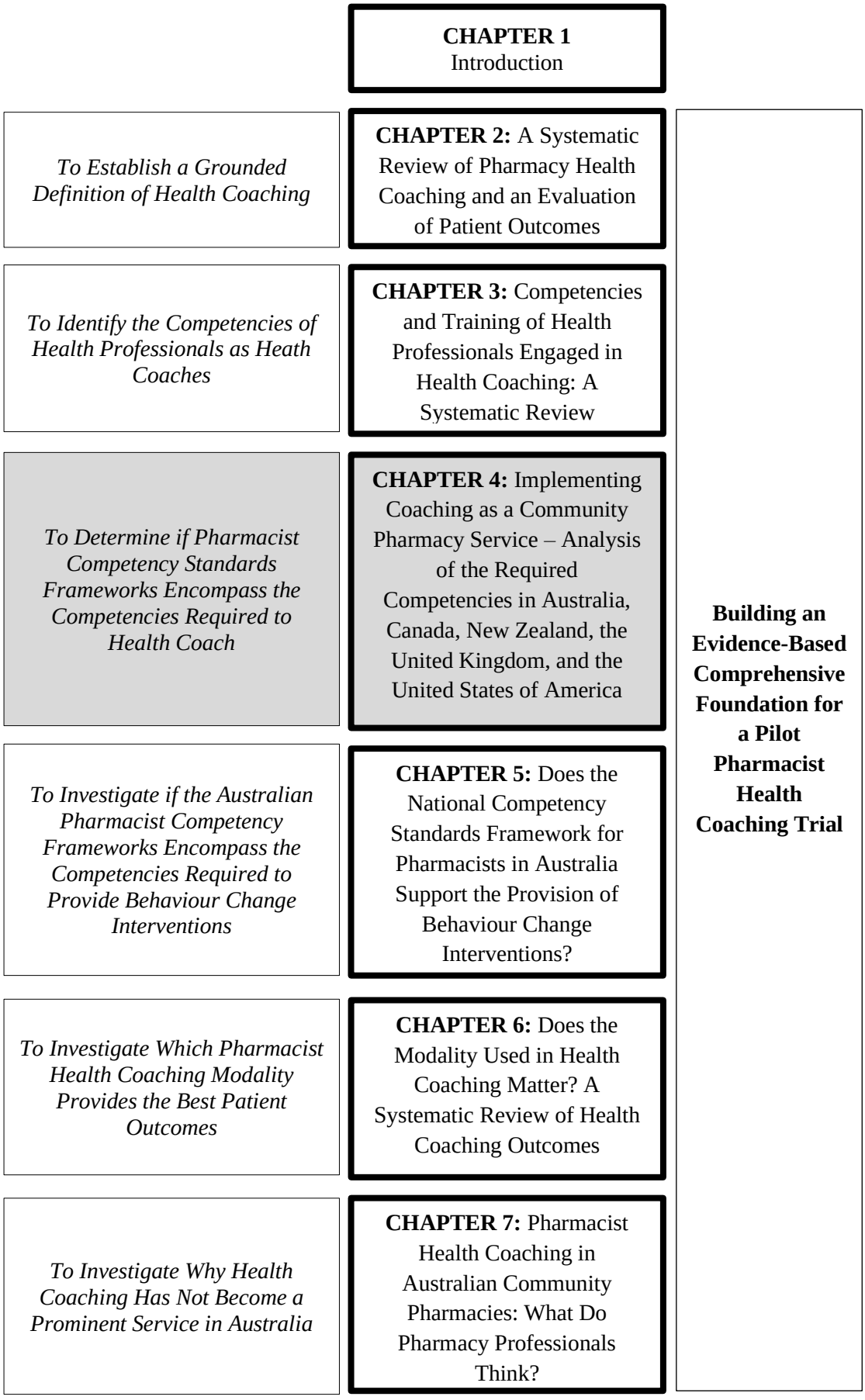
Strengths and limitations

This literature review was conducted using a systematic approach. Several databases were searched to capture all the relevant papers. Furthermore, a narrow range of search strings and terms that were decided upon in discussion with the research team made finding articles specific to the area of interest manageable. Since, some may consider this a limitation, where vital information may have been missed; the search string has been included in full, allowing for replication. Although efforts were made to minimise bias and appraise quality by having the final review and selection of papers carried out by two independent reviewers, the lack of a defined quality rating scale was a limitation and could have limited the analysis. The inclusion of only peer-reviewed research resulted in the exclusion of grey literature and unpublished materials, which may have resulted in some relevant information being missed, though this was considered negligible. Lastly, many of the papers within this review did not explicitly state the skills, knowledge, attitudes, and attributes of the health professionals as the health coach and had to be inferred, although this brings with it the risk of bias since this review did not evaluate the outcomes of health coaching interventions it is unlikely that this would be of concern.

Conclusions

This research has derived nine key competencies specific to the practice of health coaching and is interchangeable amongst the health professional groups. The competencies identified align with the competencies for coaches established by the larger coaching organisations; ICF and EMCC. Four

competencies were found to be specific to the practice of health coaching: (2) demonstrates team and leadership skills to optimise health care; (4) demonstrates tolerance and respect for individual and groups from diverse backgrounds; (5) demonstrates professional behaviour and accountability; (7) demonstrates confidence. Unlike the coaching competencies established by the coaching bodies and organisations, the health coaching competencies identified as part of this systematic review are interdisciplinary. The comparative analysis has confirmed these findings. The identification of competencies specific to health coaches paves the way for training programs tailored specifically to health professionals as health coaches. This would improve the regulation and quality of health coaching and more importantly, the health outcomes of patients with chronic health conditions that are receiving the coaching service.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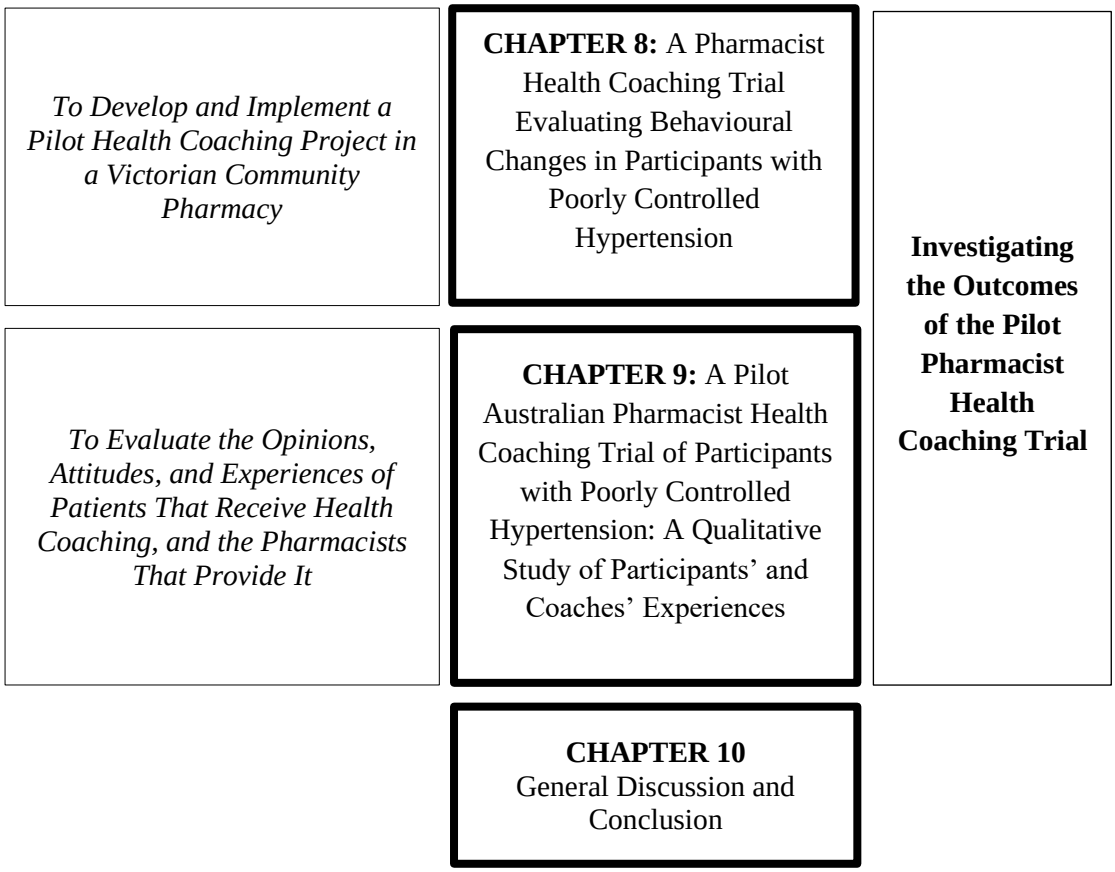
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CHAPTER 4

Implementing Coaching as a Community Pharmacy Service – Analysis of the Required Competencies in Australia, Canada, New Zealand, the United Kingdom, and the United States of America:

This work has been submitted to- Singh, H., Kennedy, G. A., & Stupans, I. (2020). Implementing Coaching as a Community Pharmacy Service – Analysis of the Required Competencies in Australia, Canada, New Zealand, the United Kingdom, and the United States of America. *Health and Social Care in the Community*. (submitted 13/05/2020)

Contributions of each author:

Contributor	**Statement of contributions**
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Kennedy, G. A	Drafting and editing of paper (10%)
Stupans, I	Acquisition of data (50%) Review and analysis of data (50%) Drafting and editing of paper (20%)

Chapter Overview

A review of the literature shows that in recent times internationally, pharmacists have increasingly shifted towards the provision of health promotion services, including health coaching. Although the intervention of health coaching has led to positive patient outcomes, the provision of pharmacist health coaching needs to be underpinned by competency frameworks. Therefore, it is imperative to determine if the competency frameworks for pharmacists support the role of pharmacists as health coaches.

This chapter builds on the findings of chapter 3 which identified nine competencies specific to health professionals who health coach. These competencies are mapped to the competency frameworks of pharmacists from AUS, NZ, and other developed countries in which pharmacists have successfully provided health coaching interventions, CAN, the UK, and the USA.

Contribution to Practice

This analysis identifies that the pharmacist competency frameworks underpin most of the competencies required to health coach. However, the competency framework for pharmacists from AUS, CAN, and NZ lacked the health coaching competency "demonstrates confidence". These results provide an opportunity for pharmacy professional organisations to develop a training framework addressing the competency gaps identified, and which also focuses on the fact that pharmacists have most of the competencies enabling health coaching. This would equip all pharmacists with the knowledge and skills to confidently provide health coaching interventions.

Abstract

The traditional competency frameworks for coaches, the International Coaching Federation (ICF), and the European Mentoring and Coaching Council (EMCC) disregard the differences in the expertise required amongst the diverse professions that may provide coaching. A recent systematic review has identified competencies specific to health professionals who health coach. There are increasing workload pressures in primary care, pharmacists can potentially shift to the greater provision of health promotion services, such as health coaching. The provision of such services needs to be underpinned by competency frameworks, which support the role of pharmacists as health coaches. This analysis identifies the competency gaps for pharmacists if they are to take on the role of health coaching. The enabling competencies of health coaches were compared to the competency frameworks of pharmacists from Australia (AUS), Canada (CAN), New Zealand (NZ), the United Kingdom (UK), and the United States of America (USA). Correlations between the international pharmacist competency frameworks and the competencies enabling health coaching showed that pharmacists from AUS, CAN, and NZ all lacked the health coaching competency "demonstrates confidence", whereas competency frameworks for pharmacists from both the UK and the USA included all competencies required to health coach. Although pharmacists from the countries examined had most of the competencies required to health coach, gaps within the international pharmacist competency frameworks were apparent, a training framework addressing these gaps would provide pharmacy professional organisations the foundation to develop a program to all equip pharmacists with the knowledge and understanding to confidently provide health coaching interventions.

Keywords: Pharmacist Roles; Pharmacy; Pharmacy Practice Research; Education and Training; Community Pharmacists

What Is Known About This?

- Pharmacists are offering health coaching services without formal qualifications.
- A recent systematic review identified competencies specific to health professionals who health coach.

What This Paper Adds

- Correlations and gaps between the international pharmacist competency frameworks and the competencies enabling health coaching were identified.
- Health coaching competency gaps may need to be addressed within a competency-based training framework if pharmacists are to take on the role of health coaching.

Introduction

Competency in the health professions is a multifaceted and dynamic concept, which encompasses characteristics that include the skills, knowledge, attitudes, and attributes for comprehensive practice by primary healthcare professionals. Competency requires the integration of enabling competencies (Hartel & Foegeding, 2004). In the case of pharmacists, competencies have been established to protect the health, safety, and wellbeing of the public by ensuring that pharmacists are fit to practice. Competencies maintain the social contract between the public and practitioners (Verma et al., 2006). Pharmacists are prepared for practice with extensive education and training and have thus more and more in recent times been moving outside their traditional dispensing roles (Mossialos et al., 2015). However, with more pharmacists offering additional non-dispensing services, it is important to demonstrate that competency frameworks for pharmacists include the competencies required to provide these services (Kennie-Kaulbach et al., 2012). One such additional service is health coaching. Health coaching has gained the attention of the pharmacy industry as it is unlike other services offered within the pharmacy, which normally involve a linear one-way process, lacking patient-centred discussions (Shah & Chewning, 2006). Health coaching involves patient-centred goal setting; these goals are meaningful to the patient and are not the clinical targets or expectations of the health professional coach (Randall & McEwen, 2000). During health coaching, it is the role of the pharmacist health coach to guide and facilitate the process of goal attainment. This patient-centred approach to goal setting has resulted in an improvement in patient health outcomes, those that are chronic in nature (Singh et al., 2019).

A search of published literature indicates that although international frameworks such as the International Coaching Federation (ICF) (The International Coaching Federation (ICF), 2019) and the European Mentoring & Coaching Council (EMCC) (European Mentoring & Coaching Council (EMCC), 2019) have been established with the remit to regulate and standardise coaching accreditation through the development of core competencies; they do not recognise that the different professions who may practice as coaches may mean that there are differing enabling competencies for practice. Despite having distinctly different areas of expertise, according to these frameworks, executive coaches have

the same competency profile as health coaches. A recent systematic review, however, has identified the competencies specifically to health coaches (Singh et al., 2020a). The paper showed that health coaches had the following competencies (1) communicates effectively for the delivery of patient-centred care; (2) demonstrates team and leadership skills to optimise health care; (3) demonstrates an understanding of relevant, fundamental and evidence-based knowledge and undertakes lifelong learning to improve professional practice; (4) demonstrates tolerance and respect for individuals and groups from diverse backgrounds; (5) demonstrates professional behaviours and accountability; (6) demonstrates the ability to utilise empathy when communicating with patients; (7) demonstrates confidence; (8) identifies an area for development to improve competency; and (9) works systematically and coordinates activities (Singh et al., 2020a).

Pharmacists' education, training, and registration are based on competency frameworks (Brightwell & Grant, 2013). Pharmacists are offering health coaching, often without apparent formal qualifications or registration to a coaching body — it is, therefore, an imperative to determine if pharmacist competency frameworks include the competencies required to carry out health coaching.

Differences exist between the competency frameworks for pharmacists across different countries. In Australia (AUS), the competencies of pharmacists are outlined within "the national competency standards framework for pharmacists in Australia". In this framework, the competencies are divided into domains. There are five domains, three of these (1.2, 4.1, and 4.2) apply equally to all pharmacists regardless of the pharmacist's scope of practice, while the remaining domains apply to pharmacists depending on their area of professional practice. Each domain is comprised of enabling competencies or elements and performance criteria assisting practitioners to provide evidence of ongoing competence (Pharmaceutical Society of Australia, 2016).

Likewise, in New Zealand (NZ), the competency framework for pharmacists, known as the "safe, effective pharmacy practice competency standards for the pharmacy profession", established by the Pharmacy Council of New Zealand, has also organised the professional practice competencies into domains. Within the competency framework, there are two mandatory domains "professionalism in

pharmacy" and "communication and collaboration"; that applies to all pharmacists. These domains allow for a minimal set of standards for non-practicing or academic pharmacists to retain their practicing registration. The optional domains: "health and medication management"; "public healthcare"; "supply and administration of medicines" and "leadership and organisational management," theoretically are mandatory for practicing pharmacists, though pharmacists can select single competencies within these domains that apply to their scope of practice. Each domain contains the pharmacist competencies, and they also outline the behaviours that provide evidence of the competencies (Pharmaceutical Society of New Zealand, 2015).

In Canada (CAN), the professional competencies for pharmacists are found within the "professional competencies for Canadian pharmacists at entry to practice". These professional competencies are grouped into nine categories, each of which holds equal importance: (1) "ethical, legal and professional responsibilities"; (2) "patient care"; (3) "product distribution"; (4) "practice setting"; (5) "health promotion"; (6) "knowledge and research application"; (7) "communication and education"; (8) "intra- and inter-professional collaboration"; and (9) "quality and safety". Each category contains key competencies, which are achieved through enabling competencies; behavioural statements that define how the competency is recognised (National Association of Pharmacy Regulatory Authorities, 2014).

Similarly, the competencies for pharmacists in the United Kingdom (UK) have been published by the Royal Pharmaceutical Society and are classed within the "foundation pharmacy framework". Herein the pharmacist competencies are categorised into four clusters: (1) patient and pharmaceutical care; (2) professional practice; (3) personal practice; and (4) management and organisation. Within each of these clusters is also a set of behavioural statements outlining how the competency is achieved (Royal Pharmaceutical Society (RPS), 2014).

Unlike the other countries, the USA does not have a competency framework for pharmacists. However, the design of university programs for pharmacy is based on the guidelines from the Centre for the Advancements of Pharmacy Education (CAPE) (Medina et al., 2013) CAPE provides a framework for curriculum development, program structure, and assessments for pharmacy programs. It contains

educational outcomes that pharmacists graduating with the Doctor of Pharmacy should have, these educational outcomes are classed into four domains: (1) "foundation knowledge" (2) "essentials for practice and care"; (3) "approach to practice and care"; and (4) "personal and professional development". Each of the domains contains subdomain outcomes.

The differences amongst competency frameworks suggest that there is no standard for competency frameworks, but rather that competency frameworks capture aspects that are required for professional competence in a particular practice environment (Koster et al., 2017).

Competencies attained at a pharmacist's initial registration allow for general level practice; pharmacists that provide specialised roles and services; however, are recognised as advanced practice pharmacists. These pharmacists fulfil competencies specific to, and within their scope of practice. Attainment of such competencies recognises a pharmacist's commitment to advancing pharmacy practice and expertise in their specific practice area (Advanced Pharmacy Practice Framework Steering Committee, 2012).

In this paper, the nine key competencies enabling health coaching (Singh et al., 2020a)are compared to the competency frameworks for pharmacists from Australia (AUS), Canada (CAN), New Zealand (NZ), United Kingdom (UK), and the United States of America (USA). In these developed countries, the role pharmacists have increasingly moved away from traditional dispensing services to the provision of patient-centred clinical services (Abduelkarem, 2014). Developing countries such as Armenia and Zimbabwe have fewer than four pharmacists per 100,000; AUS, CAN, NZ, the UK, and the USA all have more than 60 pharmacists per 100,000 population, As such it is more likely that the role of the pharmacist evolves in the developed countries (Buss et al., 2018), whereby, rather than focusing primarily on drug distribution, pharmacists can focus on the promotion of health and management of disease states; the fundamentals of health coaching (Abduelkarem, 2014; Anderson, 2002). Furthermore, pharmacists in Canada, the UK, and the USA have offered health coaching with promising outcomes (Abduelkarem, 2014; Barnett & Flora, 2017; DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012). Likewise, Denmark and the Netherlands have also reported positive outcomes from

pharmacy health coaching interventions (Singh et al., 2019). However, the limited availability of their competency frameworks has restricted their inclusion in this piece.

Although the competencies enabling health coaching identify several different skills involved in the provision of the service (Singh et al., 2020a) reports about the specifics to be included in a health coach training framework have been vague (Singh et al., 2019) other than the need to include the theoretical basis of health coaching as well as a component on motivational interviewing (Singh et al., 2019) . As such, this analysis provides the competency gaps that would need to be addressed in a training framework and subsequent credentialing, if pharmacists are to take on the role of health coaching as an additional non-dispensing service.

Aim

a) To determine if pharmacist competency frameworks from AUS, CAN, NZ, the UK, and the USA include the competencies identified as required to provide health coaching.
b) To identify gaps within the competency frameworks of pharmacists that may need to be addressed in the training if pharmacists are to take on the role of health coaching.

Methods

Ethics Approval

Ethics approval was not required for this study.

In order to determine if internationally pharmacists meet the competencies required to health coach, the enabling competencies for health coaches (Singh et al., 2020a) were compared to the competency frameworks of pharmacists from AUS (Pharmaceutical Society of Australia, 2016), CAN (National Association of Pharmacy Regulatory Authorities, 2014), NZ (Pharmaceutical Society of New Zealand, 2015), UK (Royal Pharmaceutical Society (RPS), 2014) and the USA (Medina et al., 2013) (Table 4.1).

Findings

Identifying Competency Gaps

Australia

Comparisons made between the competency standards framework for pharmacists and the competencies for health coaches showed that most of the health coaching competencies were encompassed within the minimal competencies (domains 1.2 4.1 and 4.2) required for pharmacists in AUS (Table 4.1). The only health coaching competency, which was not included within the competency framework for Australian pharmacists was (7) "demonstrates confidence".

Canada

With the exception of the health coaching competency (7)" demonstrates confidence" the results show that the competency framework for Canadian pharmacists at entry to practice included all the competencies enabling health coaching (Table 4.1).

New Zealand

Likewise, to AUS, NZ also has competence standards for pharmacists that are dynamic. The results showed that the competencies for health coaches were integrated within the two-mandatory competency domains, M1 and M2 (Table 4.1). The exception to this is health coaching competency (7) "demonstrates confidence"; this competency was not included within the competency standards framework for pharmacists in NZ.

United Kingdom

The UK pharmacy competency framework included all the nine competencies required to provide health coaching (Table 4.1).

United States of America

Comparisons made between the CAPE educational outcomes and the competencies for health coaches showed that pharmacy educational outcomes in the USA also included all nine enabling competencies required to health coach (Table 4.1).

Table 4.1. Comparison of Pharmacist Competencies to the Competencies Required to Health Coach

		Australia					Canada									New Zealand						United Kingdom				United States of America			
		Domain1: Professionalism and ethics	Domain 2: Communication and collaboration	Domain 3: Medicines management and patient care	Domain 4: Leadership and management	Domain 5: Education and research	1.Ethical, Legal and Professional Responsibilities	2.Patient Care	3.Product Distribution	4.Practice Setting	5.Health Promotion	6.Knowledge and Research Application	7.Communication and Education	8.Intra and Inter-Professional Collaboration	9.Quality and Safety	Domain M1: Professionalism in Pharmacy	Domain M2: Communication and collaboration	Domain O1: Health and medicine management	Domain O2: Public healthcare	Domain O3: Supply and administration of medicines	Domain O4: Leadership and organisation management	1.Patient and Pharmaceutical Care	2.Professional Practice	3. Personal Practice	4. Management and Organisation	Domain1: Foundational Knowledge	Domain 2: Essentials for Practice and Care	Domain 3: Approach to Practice and	Domain 4: Personal and Professional Development
Heath coach competencies	(1) Communicates effectively for the delivery patient-centred care		X					X			X		X				X	X		X		X	X				X	
	(2) Demonstrates team and leadership skills to optimise health care		X		X		X	X	X		X			X		X	X	X			X		X					X	
	(3) Demonstrates an understanding of relevant, fundamental, and evidence-based knowledge and undertakes lifelong learning to improve professional practice				X	X		X				X				X			X		X			X			X	X	
	(4) Demonstrates tolerance and respect for individuals and groups from diverse backgrounds			X				X			X					X	X		X			X						X	
	(5) Demonstrates professional behaviour and accountability	X					X									X							X						X

	(6) Demonstrate the ability to utilise empathy when communicating with patients		X					X								X							X					X	
	(7) Demonstrates confidence																						X					X	
	(8) Identifies areas for development to improve competency				X		X					X				X							X	X				X	X
	(9) Works systematically and coordinates activities		X						X	X						X							X				X	X	

Discussion

Competency-based training is built around the fundamental principles of a trainee demonstrating capability. For regulators, it has the advantage of providing measurable accountability of the trainees' skills and knowledge and for assessors; it provides a means of reliable and objective measurement of the trainee's performance. Fundamentally, for competency-based training to take place, it is necessary to identify the competencies required to perform a specific role and to map these to the trainees existing competencies (Calhoun et al., 2005). Herein, the competencies enabling health coaching were compared to the competencies of international pharmacists.

Most of the competencies enabling health coaching correlated with the pharmacist competency frameworks from the countries examined. However, except for the UK and the USA, the pharmacist competency frameworks from each of the countries examined lacked health coaching competency (7); "demonstrates confidence".

The UK competency framework for pharmacists encompasses health coaching competency (7); 'demonstrates confidence' within cluster 2, professional practice 'pharmacists must behave in a trustworthy manner that inspires confidence'. Likewise, the USA CAPE educational outcomes refer to this health coaching competency within domain 3, learning objective 3.6.5; 'communicate assertively, persuasively, confidently and clearly', and in domain 4, learning objective 4.1.9; 'display positive self-esteem and confidence when working with others'.

Notably, for pharmacists, confidence is instilled through education within degree programs and through pharmacy practice (Frankel & Austin, 2013). Despite this, however, entry to practice competency frameworks from AUS, NZ, and CAN make no mention of confidence (National Association of Pharmacy Regulatory Authorities, 2014; Pharmaceutical Society of Australia, 2016; Pharmaceutical Society of New Zealand, 2015).

Advanced practice pharmacists are those that have gained experience, knowledge, and expertise over an extended period, these pharmacists are experts within their scope of practice and should theoretically

be confident in the service that they provide (Advanced Pharmacy Practice Framework Steering Committee, 2012; Frankel & Austin, 2013).

The framework for advanced practice pharmacists in Australia (Advanced Pharmacy Practice Framework Steering Committee, 2012) and New Zealand (The Pharmacy Council of New Zealand, 2006) both propose that pharmacists must be confident when providing services. On the contrary, although some pharmacists have post-graduate certifications and experience in distinct areas of practice, Canada does not formally recognise a framework for pharmacist specialisation (Jorgenson et al., 2017). It is, therefore, difficult to comment on whether the health coaching competencies will be included within the framework for advanced practice pharmacists in Canada. Pharmacists in the UK and USA included all the competencies required to heath coach within their general practice competency frameworks (Medina et al., 2013; Royal Pharmaceutical Society (RPS), 2014), and hence the advanced practice competency framework omitted these competencies (Competency Development and Evaluation Group, 2005; Frost & Adams, 2018). Despite the differences in linguistics, terminology, and competencies contained within the frameworks for entry-level pharmacists and advanced practice pharmacists, considerable overlap with health coaching competencies was evident. In the countries that had a more dynamic competency framework, the health coaching competencies were found to be included within the competency framework for pharmacists, regardless of their area of practice or specialisation, specifically coinciding with the minimal or mandatory competencies. Furthermore, in the countries examined, the only health coaching competency that most competency frameworks did not consist of was (7); "demonstrates confidence" although, the framework for advanced practice pharmacists within these countries did include this competency. Analysis of the gaps identified, specifically pertaining to 'demonstrating confidence' within the competency framework for pharmacists can thus be used as the groundwork to plan competency-based health coach training and assessments for pharmacists (Calhoun et al., 2005).

Limitations of the Study

A limitation of the present study is that only the competency frameworks for pharmacists from AUS, CAN, NZ, the UK, and the USA have been compared to the nine key competencies enabling health coaching. However, the limited availability of pharmacist competency frameworks from other countries restricted their inclusion in this paper.

This paper provides the groundwork to plan competency-based health coach training and assessments for pharmacists and thus, should only be used as a guide. Testing resultant training programs is necessary for fine-tuning, and any training should not diminish the importance of practical health coaching experience (Brightwell & Grant, 2013).

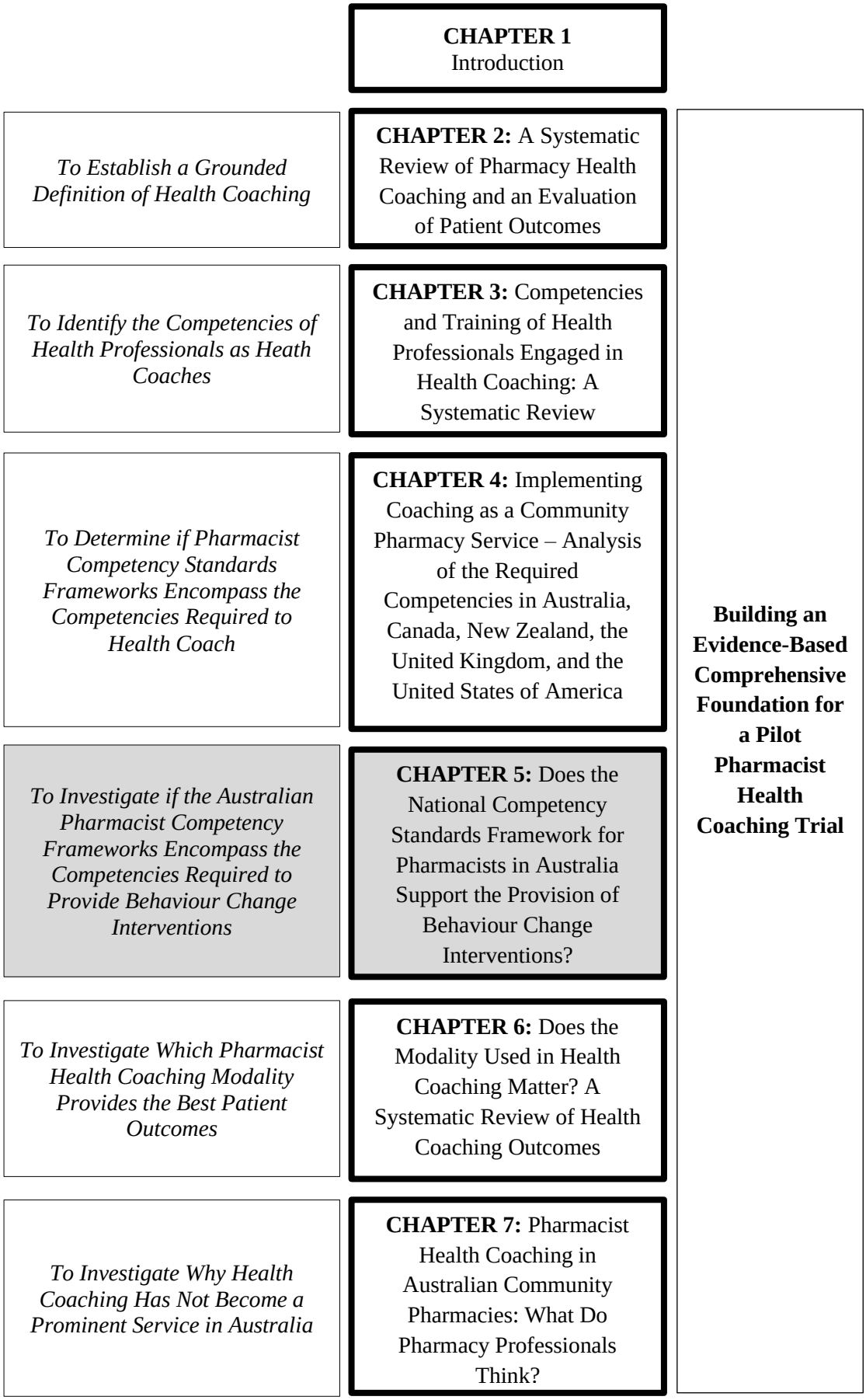
Implications of Research

This research identifies the competency gaps specific to health coaching within international pharmacy competency frameworks. It thus provides the groundwork for the development of evidence-based pharmacist health coach training programs that address these gaps. This could increase the delivery of health coaching services by pharmacists and improve clinical outcomes for patients.

Conclusion

Competency frameworks for pharmacists from the countries examined included most of the competencies required to health coach. The health coaching competency that pharmacists require additional training to accomplish is "demonstrates confidence". Competency-based training would provide pharmacists without this competency the knowledge and understanding of essential principles of health coaching. This is likely to positively influence a pharmacist's confidence in the provision of the service, which could otherwise be limited. Although pharmacists had most of the competencies required to health coach, a training framework addressing the competency gaps would provide pharmacy professional organisations the foundation to develop a competency-based program to equip all pharmacists with the skills, knowledge, and certification to confidently provide health coaching

interventions. It would also ensure equivalency in competency, ensuring that all patients that receive health coaching have optimal outcomes.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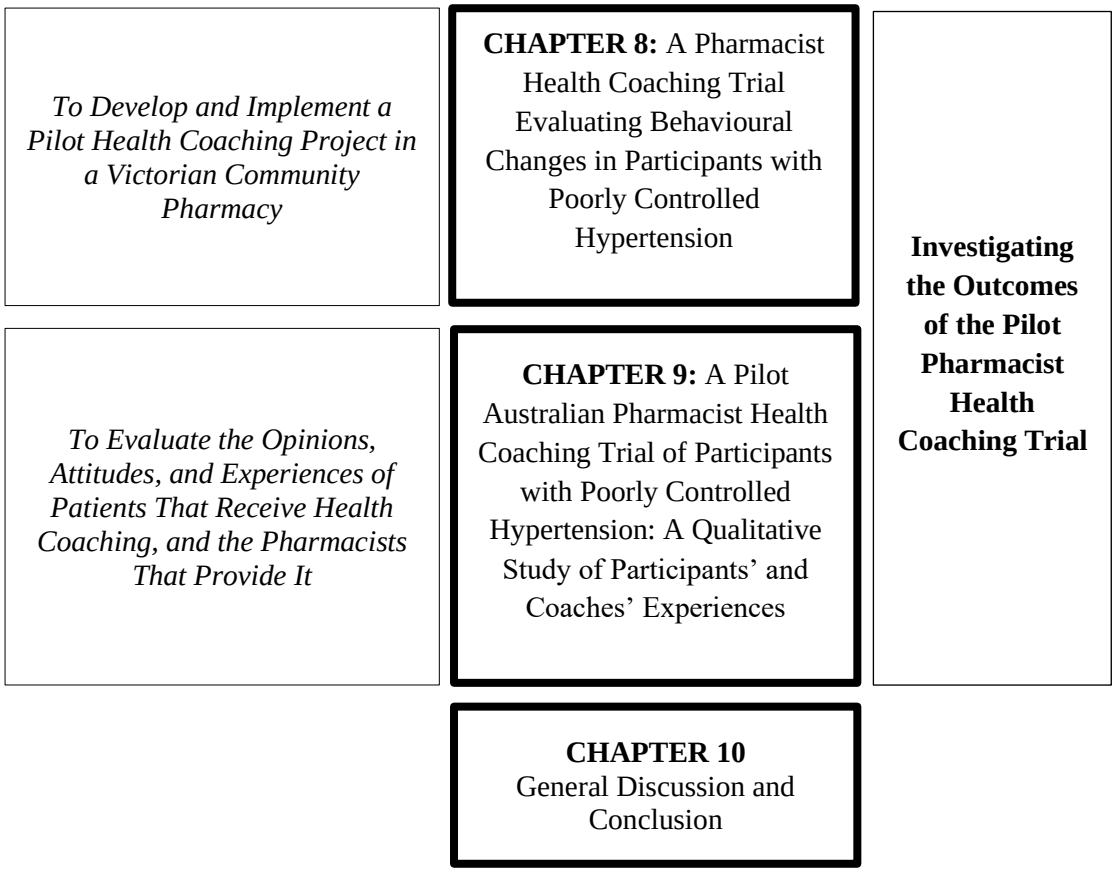
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CHAPTER 5

Does the National Competency Standards Framework for Pharmacists in Australia Support the Provision of Behaviour Change Interventions?

This work has been submitted to- Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the National Competency Standards Framework for Pharmacists in Australia Support the Provision of Behaviour Change Interventions? *Health Promotion Journal of Australia*. (Submitted 28/10/2020)

Contributions of each author:

Contributor	Statement of contributions
Singh, H. K	Mapping of data (100%) Review and analysis of data (50%) Drafting and editing of paper (70%)
Kennedy, G. A	Drafting and editing of paper (10%)
Stupans, I	Review and analysis of data (50%) Drafting and editing of paper (20%)

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Chapter Overview

The evolution of the Australian community pharmacist's role has seen the emergence of contemporary professional pharmacy services. These services are patient-centred and focus on improving the health and wellbeing of the patient by facilitating a positive behaviour change. However, the lack of specific enabling competencies referring to behaviour change interventions is apparent.

This chapter investigates if the current competency framework adequately underpins the provision of behaviour change interventions by Australian pharmacists. The competencies required to perform behaviour change interventions were mapped to the competency framework for Australian pharmacists to distinguish gaps, which may need to be addressed in the future development of competency frameworks, tertiary curriculums, and training for pharmacists.

Contribution to Practice

The analysis reveals that training regarding the provision of complex behaviour change interventions such as health coaching is needed to ensure Australian pharmacists are competent. The results also emphasise the skills and knowledge to be included within a potential health coach-training program for pharmacists (Chapter 8).

Abstract

Background: Australian pharmacists are increasingly moving towards the provision of patient centred professional pharmacy services. Some of these services are targeted towards improving patients' health and wellbeing through the facilitation of patient driven health behaviour change. This paper investigates whether the current competency framework adequately underpins the provision of behaviour change interventions by Australian pharmacists.

Methods: The foundation and behaviour change competences within each of the domains in the generic health behaviour change competency framework (GHBC-CF), was mapped to Australia pharmacist competency framework.

Results: Although the Australian competency framework underpins most of the foundation and behaviour change competences of the GHB-CF required to undertake low intensity interventions, for medium to high intensity interventions four specific task related competences need to be addressed. These are: F12 'Ability to recognise barriers to and facilitators of implementing interventions', BC4 'ability to agree goals for the intervention', BC5 'capacity to implement behaviour change models in a flexible but coherent manner' and BC6 'capacity to select and skilfully apply most appropriate intervention method'.

Conclusion: Additional training is necessary if pharmacists aspire to provide behaviour change interventions, in particular those that are complex as they involve changes to multiple health behaviours. The identification of these gaps is critical and can potentially be addressed as competency frameworks and pharmacy curricula are updated.

Keywords: behaviour, chronic disease management, competency, pharmacist, patient-centred, pharmacy service

Introduction

Chronic diseases are the leading cause of illness, disability, and death in Australia (AUS) (Australian Institute of Health and Welfare (AIHW), 2014). These health conditions are complex and are influenced by lifestyle behaviours, poor medication adherence, lack of disease knowledge, and insufficient monitoring (Khalesi et al., 2017). Therefore, management requires a comprehensive patient-centred approach. Improvements to these factors can facilitate changes to an individual's health behaviours and thus reduce the risk of complications which lead to the long-term prognosis of the condition (Khalesi et al., 2017).

The role of Australian pharmacists is evolving as their duties are being extended towards the delivery of new and extended clinical roles. These roles are increasingly involving patient-centred behaviour change interventions as a means to improve the prevention, management, and monitoring of chronic health conditions as well as the burden on health care infrastructures nationally (Lonie et al., 2017). Given that pharmacists are highly accessible health care professionals and are conveniently available to patients without the need for an appointment, they are in an ideal position to deliver these interventions, which are collectively known as professional pharmacy services. In delivering these professional services pharmacists incorporate the principles and practices of pharmaceutical care and clinical pharmacy and also engage patients to actively contribute to improvements in their health and wellbeing (Feletto et al., 2010; Moullin et al., 2016).

The changes to patient health outcomes are a measure of professional pharmacy services and are dependent on the modification of the patient's behaviour (Moullin et al., 2013). However, to successfully implement patient behaviour change, pharmacists must understand the underlying psychological principles (theory) of behaviour change and have the necessary micro-skills to promote change.

There are several psychological models and theories which describe the process of behaviour change that patients undergo during pharmacist-initiated behaviour change interventions, the most frequently described is the stages of change (SOC) approach (Arafat et al., 2016; Genberg et al., 2013; Morrison

et al., 2013; Sinclair et al., 1998). The approach was initially used to describe the stages and processes of self-change during smoking cessation (Prochaska & DiClemente, 1983). It recognises that individuals go through five stages of change: 1). pre-contemplation; 2). contemplation; 3). preparation; 4). action; and 5). Maintenance (Shearer et al., 2003). Each stage describes important components in the patients' progress to change and relies on motivation and the readiness to change (DiClemente et al., 2004). Movement from one stage to the next is not possible without fulfilling the previous stage (DiClemente et al., 2004). Therefore, the behaviour change process, as part of this theory, is described as a dynamic cyclic process in which at any one time, an individual is in one of the stages, but may progress to the next or relapse to a previous stage (Levinson et al., 2001). Progress through the stages can be stimulated by facilitating patient motivation and willingness to change health behaviour/s, hence the definitive need for pharmacists to be competent with the underlying psychological principles and theories of behaviour change (Singh et al., 2019). Since its development, the model has been applied to other forms of behaviour that have negative consequences and can be successfully managed through evolving pharmacist chronic disease management and behaviour change interventions such as weight-loss initiatives (Brown et al., 2016), alcohol consumption reduction (Brown et al., 2016; Hattingh, Hallett, et al., 2016; Shearer et al., 2003), health coaching (15), smoking cessation (Miller & Wood, 2003), and medication adherence programs (Genberg et al., 2013; Patton et al., 2020).

Medication non-adherence is a leading cause of multi-morbidity in chronic disease suffers in Australia (Laba et al., 2018). Although the core obligation of a pharmacist's role is the provision of advice and information about medicines, for safe and effective use, (Dalton & Byrne, 2017) research has shown that pharmacists rarely question patients about adherence and offer limited services to improve it (Patton et al., 2020). This has been attributed to barriers such as a lack of time, remuneration, and inadequate training in motivational and cognitive-based behaviour change techniques to appropriately guide patients (Easthall & Barnett, 2017; Patton et al., 2020). Similarly, even though pharmacists recognise that excessive alcohol consumption is a contributor to the development of chronic health conditions such as heart disease and liver disease (Hattingh, Hallett, et al., 2016; National Health and Medical Research Council, 2009) they do not routinely assess and monitor if patients have risky drinking

behaviours during non-prescription medicine requests (Hattingh, Hallett, et al., 2016). This has once again been attributed to pharmacist's lack of time and training (Hattingh, Hallett, et al., 2016). Pharmacists have reported that training in communication and intervention skills and in some cases increasing confidence and alcohol-related knowledge was necessary for service delivery (Hattingh & Tait, 2017). Furthermore, there are also limitations to the training provided to pharmacists in previous studies investigating the provision of screening and brief interventions for alcohol-related problems (Hattingh, Hallett, et al., 2016) .These studies have reported that the training materials are at times not specific to pharmacists and that widespread dissemination of face-to-face mode training is not practical. Researchers have thus recognised that collaboration with pharmacy professional organisations namely the Pharmaceutical Society of Australia and the Pharmacy Guild of Australia would allow the development and widespread dissemination of skills based training and education programs for pharmacists to provide behaviour change interventions (Hattingh, Hallett, et al., 2016).

The design and development of undergraduate and postgraduate training curricula, accreditation, the regulation of career entry, and career progression for pharmacists are based on competency frameworks. (Hartel & Foegeding, 2004; Marriott et al., 2008) These frameworks are broad, as the definition of competence is heterogeneous and difficult to exclusively define to provide consensus and application to all roles (Lingard, 2009). The national competency standards framework for pharmacists in Australia is developed and updated by the pharmacy practitioner development committee (PPDC), which consists of 11 member organisations from different pharmacy professional backgrounds. The framework consists of competency standards that encompass a wide range of skills, knowledge, attitudes, attributes, and accompanying behaviour (s) that apply equally to all pharmacists at the entry to practice and assure the society that they will practice at benchmark standards at all times (Le Deist & Winterton, 2005; Pharmaceutical Society of Australia, 2016). Within this framework, the competencies are grouped into domains. There are five domains, each with standards or enabling competencies. Three of these (1.2, 4.1, and 4.2, encompassing professionalism, self-leadership, and professional contribution respectively) apply equally to all pharmacists irrespective of the pharmacist's scope of practice. The remaining

enabling competencies apply to pharmacists depending on their area of professional practice (Pharmaceutical Society of Australia, 2016).

This framework for pharmacists in Australia is broad and follows a worker-orientated approach. (Gonczi et al., 1990; Pharmaceutical Society of Australia, 2016). As the definition of competence is heterogeneous and difficult to exclusively define to provide consensus and application to all roles, (Lingard, 2009) the framework is focused on the general attributes that pharmacists require to effectively perform their roles. (Gonczi et al., 1990; Pharmaceutical Society of Australia, 2016) It encompasses a range of personal and professional characteristics, which are assessed, based on the performance of pre-defined behaviour (s). It is expected that pharmacists maintain and expand upon these characteristics to keep up to date with future professional developments (Marriott et al., 2007). However, this approach has been criticised for its focus on a relatively small number of competencies deemed necessary for practice, often referred to as core competencies, as it is possible to overlook other competencies that may also be important (Gonczi et al., 1990; Wright & Morgan, 2012). There are no competency standards, which explicitly define the skills and knowledge requirements unique to the future and the evolving role of the pharmacist specific to behaviour change interventions within community practice (Kennie-Kaulbach et al., 2012; Pharmaceutical Society of Australia, 2016). Pharmacists themselves have also indicated that members may lack professional competence, confidence, and communication skills necessary for the provisions of effective behaviour change professional services (Burrows et al., 2016). Therefore, as pharmacists in Australia move towards the provision of behaviour change interventions it is imperative to determine if pharmacists have the specific skills and knowledge required to provide patient-centred behaviour change interventions.

The national competency standards framework for pharmacists in Australia include a competency standard, 3.6 which refers to promoting health and well-being. Australian pharmacy students receive guidance on providing smoking cessation programs during university education based on this standard. (Australian Pharmacy Council, 2020; Pharmaceutical Society of Australia, 2016) However, this intervention only involves brief opportunistic interactions with patients (Joyce et al., 2007) and uses a generic approach; the 5As, which involves five main steps (ask, advise, assess, assist, arrange). The

intervention is initiated by identifying smokers and then uses interventions appropriate to the patient based upon their willingness to quit. (Edwards et al., 2006; Miller & Wood, 2003) Limited training in behavioural psychology and a lack of practical experience also may make these skills inadequate when applied in professional practice. Furthermore, there is conflicting evidence justifying the effectiveness of existing pharmacist-led smoking cessation interventions in Australia. Studies recognise the brief opportunistic interventions as improving cessation rates (Miller & Wood, 2003), but also acknowledge the need for additional training and education to improve pharmacist's confidence in implementing evidence-based patient-centred smoking cessation services (Edwards et al., 2006; Miller & Wood, 2003; Saba et al., 2013; Saba et al., 2014).

Hence, there is a need to comprehensively examine a competency framework that specifically defines the competencies related to behaviour change. In this type of framework, competence is considered in a functional sense and is concerned with the successful completion of tasks that constitute a specific task as part of a role (Sparrow, 1995). This is apparent within the generic health behaviour change competence framework (GHBC-CF), which describes a comprehensive task-related list of competences required by health care workers to deliver health behaviour change interventions (Dixon & Johnston, 2010). The document describes in very fine detail competences, which are arranged into three domains namely, foundation competences, behaviour change competences, and behaviour change techniques in three routes; motivation development, action on motivation and prompted cues. Furthermore, within each of the domains the competencies are organised into three levels, which are characterised by the intensity of the health behaviour change intervention to be delivered: (1) low-intensity interventions, are interventions delivered following a protocol with restricted flexibility for changes by the provider; (2) medium intensity interventions are those for which there is an established protocol, although it allows for some flexibility in the delivery by the practitioner; and (3) high-intensity interventions are flexible interventions that are adapted to suit the patient's needs. The hierarchy of intervention intensity is cumulative and competence to work at any given level assumes the performance of enabling competences described at the lower levels (Dixon & Johnston, 2010).

In accordance with the GHBC-CF, weight-loss initiatives, medication adherence programs, and health coaching for chronic disease management are medium intensity behaviour change interventions. Considering that Australian pharmacists provide these services with limited training in behavioural psychology (Joyce et al., 2007) it is important to identify specific gaps in competences required to provide behaviour change interventions.

The aim of this paper was to identify specific skills, which need to be addressed to enable Australian pharmacists to effectively deliver patient-centred behaviour change interventions.

Method

A qualitative descriptive methodology was employed in this study. The foundation and behaviour change competences within each of the domains in the GHBC-CF (Dixon & Johnston, 2010) were mapped to the Australian pharmacist competency framework (Pharmaceutical Society of Australia, 2016). The competency domains within the GHBC-CF are shown in Table 5.1. A comparative document analysis was subsequently performed. The mapping of the competences was undertaken by one author and checked by two other authors. Table 4.2 was populated with the Australian pharmacist competencies against the competences of the GHBC-CF. A detailed version of the mapping process is given in the Appendix 1.

Table 5.1. A Detailed Summary of the Competencies within Each Domain and At the Intervention Levels (Adapted from Dixon and Johnston)

	Foundation Competences of GHBC-CF						Behaviour Change Competences of GHBC-CF					
Low Intensity Interventions	F1	F2	F3	F4	F5		BC1	BC2	BC3	BC4		
				F10					BC9	BC10		
Medium Intensity Interventions	F1	F2	F3	F4	F5	F6	BC1	BC2	BC3	BC4		
	F7		F9	F10		F12	BC7	BC8	BC9	BC10		BC12
High Intensity Intervention	F1	F2	F3	F4	F5	F6	BC1	BC2	BC3	BC4	BC5	BC6
	F7	F8	F9	F10	F11	F12	BC7	BC8	BC9	BC10	BC11	BC12

F1: knowledge of professional and ethical guidelines; F2: ability to make use of supervision; F3: knowledge of and ability to work with difference; F4: ability to communicate and work with difference; F5: ability to engage client; F7: ability to foster and maintain a good intervention alliance; F8: capacity to adapt interventions to client need; F9: ability to manage expectations; F10: ability to deliver information; F11: capacity to structure and pace consultations; F12: capacity to deal with barriers to and facilitators of interventions; BC1: knowledge of health behaviour and health behaviour problems; BC2: ability to take a generic assessment ;BC3: knowledge of models of behaviour change and ability to use them in practice; BC4: ability to agree intervention goals; BC9: ability to use measures and self-monitoring to guide interventions and outcomes; BC10: health behaviour problem solving ability; BC12: ability to end intervention and plan for long term maintenance; BC7: capacity to implement behaviour change in a manner consonant with its underlying philosophy; BC8: capacity to select and apply the most appropriate intervention method; BC9: ability to use measures and self-monitoring; BC12: ability to end intervention and plan for long-term maintenance; BC1: knowledge of health behaviour and health behaviour problems; BC3: knowledge of models of behaviour change and ability to use them in practice; BC5: capacity to implement models in a flexible manner; BC6: capacity to select and apply most appropriate intervention method; BC11: capacity to manage obstacles to carrying out behaviour change; BC12: ability to end intervention and plan for long-term maintenance.

Results

Mapping of the foundation competences of the GHBC-CF (Dixon & Johnston, 2010) with the competency framework for Australian pharmacists (Pharmaceutical Society of Australia, 2016) indicated that the Australian competency framework underpins all of the foundation competencies required to undertake low-intensity behaviour change interventions (Table 5.2). However, the Australian competency framework did not underpin all the specific behaviour change competences required for low-intensity interventions; it did not support BC4 'ability to agree on goals for the intervention' (Table 5.2). Furthermore, the foundation competence F12 'capacity to deal with barriers to and facilitators of implementing interventions required to perform both medium and high-intensity interventions did not map to the Australian competency framework (Table 5.2). The behaviour change competences BC5 'capacity to implement behaviour change models in a flexible but coherent manner' and BC6 'capacity to select and skilfully apply the most appropriate intervention method', required to perform high-intensity interventions also did not map to the Australian competency framework (Table 5.2).

Table 5.2. Australian Pharmacist Competency Framework Domains Mapped to the Generic Health Behaviour Change Competency Framework (GHBC-CF)

Australian pharmacist competency framework domains	Foundation Competences of GHBC-CF						Behaviour Change Competences of GHBC-CF					
Domain1: Professionalism and ethics	F1	F2			F5							
	F7	F8	F9					BC8	BC9			
Domain 2: Communication and collaboration	F1		F3	F4	F5	F6						
	F7	F8	F9	F10			BC7	BC8				
Domain 3: Medicines management and patient care	F1						BC1					
	F7	F8		F10	F11							BC12
Domain 4: Leadership and management	F1						BC1	BC2	BC3			
	F7							BC8		BC10	BC11	BC12
Domain 5: Education and research												
		F8										

Refer to table 5.1 for legend.

Discussion

Australian community pharmacists are in an ideal position to assist with chronic disease management and also to capture populations not motivated to use mainstream health services (Joyce et al., 2007). They can do this through the delivery of several health promotion services that focus on behaviour change and include smoking cessation (Brown et al., 2016), weight management (Brown et al., 2016), alcohol reduction support (Brown et al., 2016), and health coaching (Joyce et al., 2007; Singh et al., 2019). Implicitly, these services can improve public health; however, a potential barrier to their delivery is the level of skill and confidence of the pharmacist (Joyce et al., 2007; Singh et al., 2020b). Mapping of the GHBC-CF competences (Dixon & Johnston, 2010) to the Australian pharmacist competency framework (Pharmaceutical Society of Australia, 2016) indicated all the foundation competences required to provide low-level behaviour change interventions were met by the Australian competency framework. However, pharmacists require additional training for the behaviour change competences for low-level interventions (Table 5.2), specifically, pertaining to the behaviour change competence BC4 'ability to agree on goals for the intervention'. This competence requires intervention providers to work collaboratively with patients. As pharmacists are traditionally accustomed to using a generic style of counselling, involving a linear, one-way process lacking patient-centred discussions, additional training is justified (Shah & Chewning, 2006). By contrast, although domains 1, 2 and 3 of the Australian pharmacist competency framework refer to the provision of patient centred care, they are overarching in order to comply with the delivery of a range of services, and thus do not underpin the granular competences of the GHBF-CF referring to the delivery of patient centred behaviour change interventions. Pharmacists have the underlying skills for the delivery patient centred services, training specifically for behaviour change interventions should focus on the intervention itself; the theoretical framework and the process involved.

The competences for low-intensity interventions, which are delivered following a protocol with restricted flexibility to accommodate changes, must be achieved to provide interventions at higher intensity levels. Evident from the results (Table 5.2) Australian pharmacists require additional training to enable the provision of medium-high-level intensity behaviour change interventions, which offer

flexibility in delivery. The Australian pharmacist competency framework does not encompass the foundation competence F12 'capacity to deal with barriers to and facilitators of implementing interventions' of the GHBC-CF (Table 5.2). This foundation competence is dependent on having the skills and knowledge required to implement behaviour change interventions and subsequently being able to recognise barriers and facilitators to the behaviour change intervention, specific to themselves, the patient, and the physical surroundings (Dixon & Johnston, 2010). Although the Australian competency framework refers to the pharmacist's ability to identify facilitators of patient-centred care in domains 1, 2, and 3 and the ability to identify problems towards patient care in domain 2, it does not allude to behaviour change.

In addition to smoking cessation, most pharmacy curricula also include weight-management education (Zieck et al., 2018). Despite this, a survey of pharmacy students from one Australian university indicated that students felt that their knowledge and confidence was insufficient to provide weight-management services in their future career (Zieck et al., 2018). Likewise to this, interviews with pharmacists (n = 537) about their involvement in weight-loss interventions showed that 91.6% requested further training (Zieck et al., 2018). Therefore, given that the educational programs delivered by pharmacists have a limited ability to produce behavioural change in patients, (Joyce et al., 2007) supporting the evolving role of pharmacists is imperative towards health promotion and chronic disease management in Australia. Reference to behaviour change in the pharmacist competency framework and university curricula may ensure that pharmacists are skilled to provide these services safely, and confidently.

Mapping of the GHBC-CF to the Australian competency framework showed that pharmacists also require additional training to attain the behaviour change competences, BC5 'capacity to implement behaviour change models in a flexible but coherent manner' and BC6 'capacity to select and apply most appropriate intervention method' required for high-intensity interventions (Table 5.2). These competences describe the specific knowledge about and the skills for the delivery of behaviour change interventions. Since the Australian competency framework for pharmacists is broad, allowing for an expansive and flexible scope of practice (Pharmaceutical Society of Australia, 2016), it does not

encompass distinct competencies for the various roles that pharmacists employ, such as providers for behaviour change interventions. Comparably, this is also emphasised by the outcomes of a study, which mapped the competencies of pharmacists from Australia, Canada, New Zealand, the United Kingdom, and the United States to the competencies required to health coach. The results showed that overall the Australian competency framework supported Australian pharmacists to coach, however, the one enabling competency which was missing was around confidence (Singh et al., 2020b). Without furthering their knowledge and developing skills in health psychology and the underlying theories of behaviour change, it is unlikely that pharmacists will achieve a level of confidence that will allow them to deliver health coaching (Singh et al., 2019), weight loss initiatives (Brown et al., 2016) alcohol reduction (Brown et al., 2016; Hattingh, Hallett, et al., 2016; Shearer et al., 2003) and medication adherence (8, 19) interventions which facilitate behaviour change to improve chronic disease management.

It is recognised that several factors; social, environmental, individual, physiological, biological, and cultural components influence public health problems including chronic health conditions. Facilitating positive changes to these complex health conditions (McNamara et al., 2015) involves adapting the intervention to patients and the multiple health behaviours and factors influencing it. (Kunc, 2018) Hence, there is a need for pharmacists to build on their existing competences and attain the skills and knowledge required to facilitate positive changes to the health behaviours of their clients.

England has responded to the advancing role of pharmacists in public health by introducing the consultation skills standards for pharmacy practice package, which addresses the need for patient-centred care, by facilitating behaviour change through effective communication and collaborative inter-professional discussions (Centre for Pharmacy Postgraduate Education (CPPE) & NHS Health Education England, 2014; Singh et al., 2019). Implementation of the tool has shown that while it provides a foundation for adopting a patient-centred approach in the pharmacy (Barnett & Flora, 2017), continued practical support and experience is required to establish the standards into daily work practices (Barnett et al., 2019). Similar tools have also been implemented by the USA and Canada; the Patient-centred Communication Tools (PaCT) and the Calgary-Cambridge guide (C-Cg) respectively

(Da Costa et al., 2019). Although, these tools also provide instructional guidance they offer limited scope to address the holistic approach required for the delivery of patient-centred chronic disease management services (Da Costa et al., 2019).

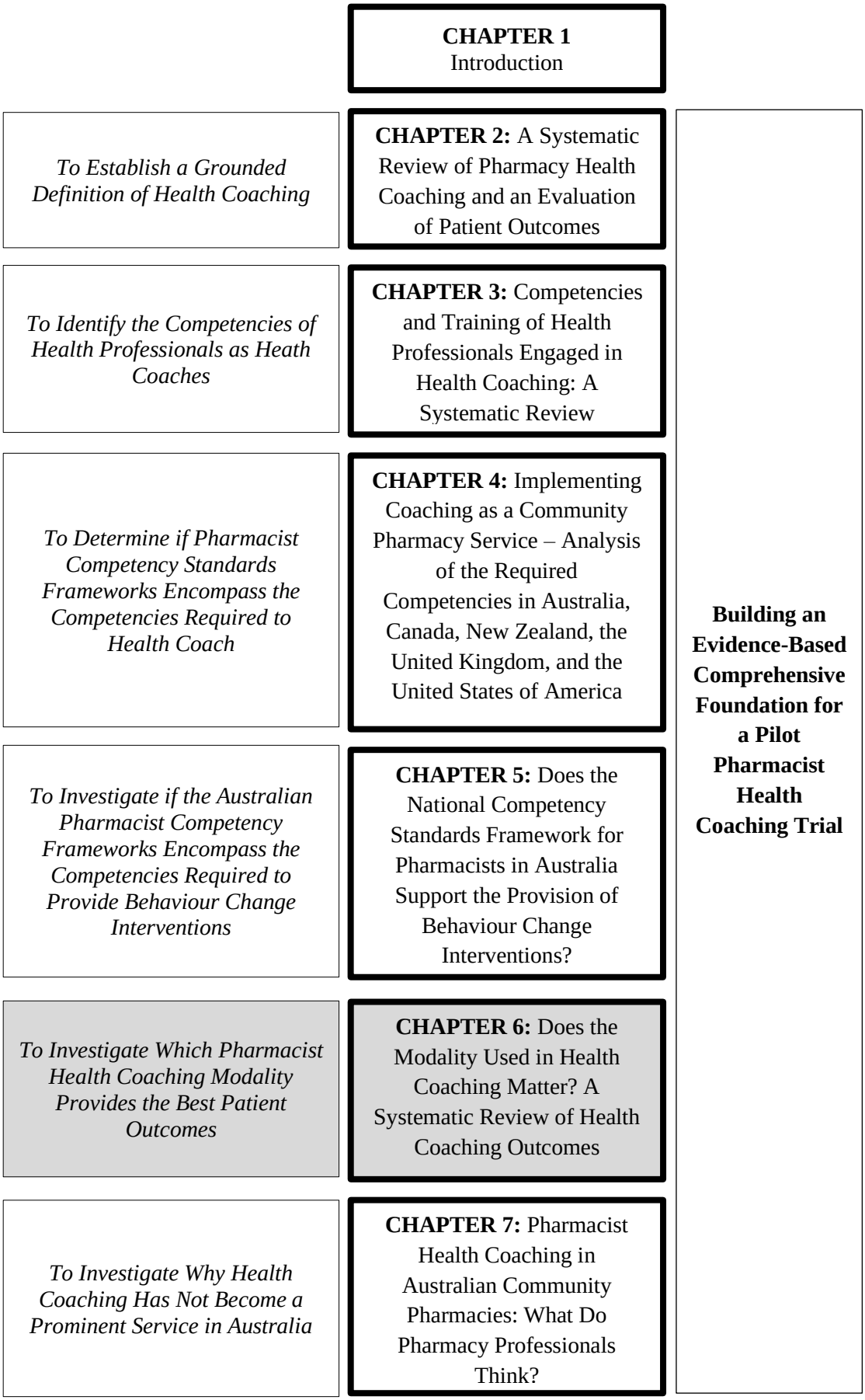
Although pharmacists in Australia have most of the foundation and behaviour change competences within the GHBC-CF (Table 5.2), several gaps have been identified. These outcomes have been also been characterised within pharmacists sentiments within the literature (Easthall & Barnett, 2017; Hattingh & Tait, 2017; Patton et al., 2020). As these pharmacists broaden their professional roles towards the provision of patient-centred health promotion services for the management of chronic health conditions (Joyce et al., 2007), it is imperative that the skills, knowledge, attitudes, and behaviours needed for these consultations be clearly defined, comparable to those introduced by international counterparts (Centre for Pharmacy Postgraduate Education (CPPE) & NHS Health Education England, 2014; Da Costa et al., 2019). The studies examining the international consultation tools provide Australian pharmacy educators and curriculum developers the scope to build on the existing tools and to ensure that the gaps identified within the GHBC-CF (Table 5.2) are met. This would ensure that graduates receive thorough training and are qualified to adopt these integrative patient-centred roles at entry to practice.

Limitations

A limitation is this work is that it is qualitative; therefore, this study has the potential to be influenced by researcher biases. However, to minimise this, the research team utilised the method of content analysis and cross-checking of results. Furthermore, the results of this study do not outline a specific training process for pharmacists in Australia to provide behaviour change interventions. It does, however, provides the background for empirical research to validate the findings as it identifies gaps within the Australian pharmacy competency framework, which would need to be addressed within pharmacy curriculums, practice guidelines, and training, given that pharmacists are currently providing these services.

Conclusion

The Australian pharmacist competency framework does not underpin all the competencies identified as being required for low, medium, and high-intensity interventions within the GHBC-CF. The few competencies for which pharmacists require additional training are F12 'Ability to recognise barriers to and facilitators of implementing interventions', BC4 'ability to agree on goals for the intervention', BC5 'capacity to implement behaviour change models in a flexible but coherent manner' and BC6 'capacity to select and skilfully apply most appropriate intervention method'. Some of these competences are imperative to the provision of basic low-level interventions and provide the groundwork for the delivery of more complex chronic disease management interventions such as health coaching, weight loss initiatives, alcohol reduction, and medication adherence programs. Therefore, addressing these competency gaps through task-specific training is imperative, as it would enable pharmacists with the confidence and skills to provide these interventions at entry to practice and effectively contribute to Australia's chronic disease management.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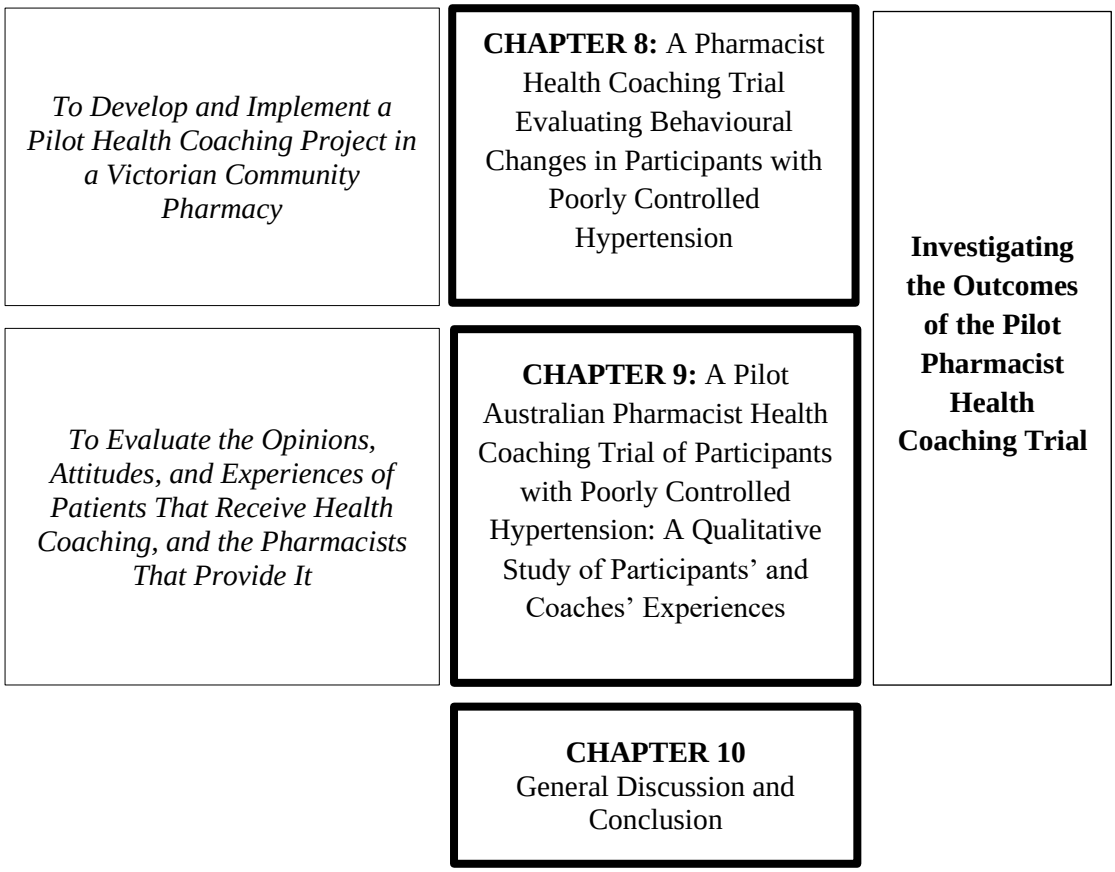
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CHAPTER 6

Does the Modality Used in Health Coaching Matter? A Systematic Review of Health Coaching Outcomes

This work has been previously published in - Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the Modality Used in Health Coaching Matter? A Systematic Review of Health Coaching Outcomes. *Patient Preference and Adherence*, *14*, 1477.

Contributions of each author:

Contributor	**Statement of contributions**
Singh, H. K	Literature searching and screening of titles (100%) Screening of abstracts (50%) Review and analysis of data (75%) Drafting and editing of paper (70%)
Kennedy, G. A	Review and analysis of data (5%) Drafting and editing of paper (10%)
Stupans, I	Screening of abstracts (50%) Review and analysis of data (20%) Drafting and editing of paper (20%)

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Chapter Overview

Remuneration for pharmacy services is predominantly focused on the evidence of positive patient outcomes and cost-effectiveness, a lack thereof has made it difficult to establish health coaching within community pharmacy practice within Australia. To promote the implementation and remuneration of health coaching services by pharmacists, it is important to determine the most practical modality.

This chapter applies the grounded definition of health coaching (Chapter 2) to identify literature referring to the modality of pharmacist health coaching. The outcomes of the various modalities and the training required were systematically reviewed. Results will justify the method employed in a pilot pharmacist health coaching trial (Chapter 8 and 9).

Contribution to Practice

Conclusions about the health coaching modality producing the most favourable outcomes and simplest training requirements were not possible. However, considering that health coaching is a patient-centred service the modality used by pharmacists should be tailored to the patient. Although the thesis focusses on health coaching in Australia, the conclusions apply to pharmacist health coaching internationally, whereby in addition to being patient-centred, the choice of modality would depend on the country, cultural norms, disease states, and the economic viability.

Abstract

Objective: The purpose of this review was to evaluate the modalities (e.g., face-to-face, telephone, or electronic) of pharmacist health coaching providing the greatest improvement in patient outcomes, to enable a more comprehensive evaluation to be done and quality decision making around health coaching modalities to be undertaken by pharmacists.

Methods: This systematic review followed the PRISMA guidelines. CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS were searched (2000-2019). Included articles were reviewed for the modality used to health coach, the training provided, and the outcomes.

Results: Twelve papers met the eligibility criteria. A majority of studies included involved a combination of modalities of pharmacist health coaching. Four papers referred to face-to-face sessions, and one study used telephone coaching. In each paper, coaching led to an improvement in clinical and non-clinical health outcomes.

Conclusion: The training provided to health coaches varied and in some cases was not reported. Inconsistencies in reports led to difficulties when comparing study outcomes. Therefore, conclusions about the modality providing the greatest improvement in patient outcomes and the most pragmatic health coaching modality are not possible. Studies that document the training, the modality, the outcomes, and the cost benefits of coaching by pharmacists are warranted to enable a more comprehensive evaluation to be done and quality decision making around health coaching modalities to be provided by pharmacists.

Keywords: health, coaching, pharmacy, modalities

Introduction

Unhealthy behaviours have been linked to the increasing prevalence of preventable chronic diseases worldwide, putting significant strain on healthcare infrastructures (Wolever et al., 2013).The most common of these include; chronic respiratory disease, cardiovascular disease, diabetes, and cancer (Wolever et al., 2013). Chronic health conditions are those that are prolonged and complex in nature, and although treatable, are unable to be completely cured. Therefore, these conditions require ongoing monitoring and management (Dowrick et al., 2005).

As comprehensively trained healthcare professionals at the front line of the health care system, pharmacists are ideally positioned to administer community programs and services that promote health (Dalton & Byrne, 2017). In spite of their extensive training and having the capability to provide a range of services, in Australia the skills of a pharmacist are often over-looked. Consequently, the main duties of a pharmacist continue to comprise of dispensing, despite the introduction of contemporary pharmacist services in the 1980s. These services included; screening, medication reviews, medication education, and, in-depth counselling sessions designed to promote patient-centred care (George et al., 2010; Gregório et al., 2017; Negaard et al., 2019; Spencer & Edwards, 1992).

The introduction of pharmacy professional services has paved the way for pharmacists to utilise the knowledge and skills gained through education and training (Roberts et al., 2005; Spencer & Edwards, 1992). Many services have already been effectively implemented by pharmacists, but the incorporation of these services into routine pharmacy practice has been gradual (Dalton & Byrne, 2017; Feletto et al., 2010; Garcia-Cardenas et al., 2017). This has been attributed to the lack of time pharmacists have, and the low rates of remuneration received for these services (Garcia-Cardenas et al., 2017). However, services that have a beneficial effect on patient health outcomes are more likely to promote and expand the professional responsibilities of a pharmacist (Schumock et al., 2003).

Health coaching is a promising intervention, helping individuals change health behaviours positively (Neuner-Jehle et al., 2013; Olsen & Nesbitt, 2010; Palmer et al., 2003). It is defined as a service that is provided to patients by health care professionals with the intent to promote health management/ health

risk prevention. The interaction between patient and health professional is collaborative and patient focused. It requires the healthcare professional to facilitate changes to the patients' health behaviours through health education and motivation to achieve predetermined personal goals and targets. Patients have regular follow-up sessions with the health care professionals during which time both are held accountable for the patient's outcomes [24]. Health coaching has recently gained attention within the pharmacy profession, as a possible way to assist patients with health education, medication adherence, and prevention and management of chronic health conditions (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Herborg et al., 2008; Lonie et al., 2017; Luder et al., 2016; Wertz et al., 2012).

Studies have shown that optimising health and lifestyle behaviours can have a significant effect on the prevention and management of chronic health conditions (Bauer et al., 2014; Palmer et al., 2003). Health coaching is a professional service that is offered to patients by health care professionals with the intent to promote the management of chronic health conditions and prevent complications. It involves a patient-focused interaction with the aim to improve health behaviours through goal setting and follow-up (Singh et al., 2019). Health coaching is distinct to other lifestyle and health improvement programs provided by health professionals, such as counselling. Counselling is characterised as having a rigid method to health education and management, as it involves the health care provider instructing the patient about changes to make, taking little acknowledgment of the patient's own goals and desire for change (Griffiths & Campbell, 2008; McNeilly, 2003; Vale et al., 2005). In contrast, health coaching can be individualised to a patient and can be adjusted to respect the needs and desires of the patient (Vale et al., 2005).

Various health coaching modalities have been used by pharmacists. These include; telephone, face-to-face, electronic including; texts, online links, applications, and videos, or a combination of these media (Akers et al., 2019; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; MacLean et al., 2012; Morgan, 2014; Singh et al., 2019; Wertz et al., 2012; Wolever & Dreusicke, 2016).

Globally, governments are acknowledging the need to improve patient access to quality pharmaceutical services and the need for choice across a range of services (Phul et al., 2004). The provision of new models of service delivery is dependent on the efficacy of various modalities and its economic viability from the perspective of the provider organisations and the patients (Phul et al., 2004).

Pharmacist health coaching studies have not investigated the modalities of health coaching providing the greatest effect with respect to patient health outcomes. Studies have also not addressed the practicalities of coaching interventions or the specific training requirements for pharmacists engaged in health coaching. Limited studies have investigated the cost-effectiveness of health coaching interventions.

Telephone health coaching refers to patients being contacted by the pharmacist health coach over by telephone, usually at a mutually agreed time. The duration and number of, telephone health coaching sessions can vary (MacLean et al., 2012). This mode of health coaching is considered convenient to patients, as there is no need to travel and thus is suitable for patients living in rural areas as well as those unable to travel (MacLean et al., 2012). Furthermore, there are minimal costs associated with the delivery of a telephone health coaching service as the health coach directly contacts the patient (MacLean et al., 2012).

Face-to-face health coaching is provided in person. This may involve the health coach travelling to the patient's home (Akers et al., 2019), alternatively, the coaching may take place at the coach's workplace (O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Wertz et al., 2012) or another mutually agreed location. Consequently, this mode of health coaching may be inconvenient for some patients. However, it promotes and helps maintains rapport and accountability between the patient and coach, without which the process of health coaching may not be successful (Singh et al., 2019; Wolever & Dreusicke, 2016).

Electronic health coaching includes the use of text messaging, online links, applications, and videos. This mode of health coaching is convenient and can be tailored to the individual. The time taken to

implement some of these modes could be a drawback, but it is a modality that can be used to health coach multiple patients simultaneously (Morgan, 2014).

In an effort to reduce healthcare expenditure globally, public health care funders have shifted focus towards preventative health services, like health coaching (Byrnes et al., 2012). Studies have shown that investment in wellness programs prove cost-effective as they reduce financial pressures on health care systems, whilst promoting health and disease management. The programs also increase performance and productivity at work due to improved health and reduced sick days (Clarke, 2010). This was demonstrated in a large scale employer-sponsored Canadian study, whereby community pharmacist-led health coaching in patients with hypertension promoted employee productivity through improved medication adherence and patient health outcomes (Ontario Pharmacists Association and Green Shield Canada, 2014). Similarly, private health insurer and employer-sponsored health insurers in the United States have successfully funded the provision of pharmacist health coaching programs for patients with chronic issues such as; chronic artery disease, chronic obstructive pulmonary disease, diabetes, lower back pain, and heart failure (Byrnes et al., 2012; Fera et al., 2009; Luder et al., 2016). Studies investigating the outcomes of such programs have reported positive health results, indicating that promoting collaborative decision-making and improving health literacy, self-management, and the health professional's communication techniques to individuals at risk, can reduce health care expenditure and the utilisation of resources (Byrnes et al., 2012; Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012). In Australia as part of the healthcare system Medicare benefits are available for patients with established chronic health problems are monitored by their general practitioner (GP), but these benefits do not cover prevention or coaching programs (Biggs, 2013; Byrnes et al., 2012; Scuffham et al., 2019).In response to the limited Australian research evaluating health coaching as well as the global debate about its cost-effectiveness, (Byrnes et al., 2012) the private health insurer Bupa initiated the Costs to Australian Private Insurance – Coaching Health (CAPICHe) trial. The trial researched the effect of telephone health coaching in clients with chronic health problems: chronic obstructive pulmonary disease (COPD), diabetes, heart failure, low back pain, or coronary artery disease (CAD), in comparison to usual care. These conditions are estimated to burden the provider most

significantly with high-cost claims (Scuffham et al., 2019). The outcomes of CAPICHe showed that after 12-months of follow-up, although there were no significant differences in total costs between the health coaching and control groups, the hospital admissions costs in the health coaching group were lower in comparison to the control group (Scuffham et al., 2019).The results of the trial provide an important step towards the promotion of health coaching in Australia; they also assess the generalisability of former health coaching trials from the United States to other nations. However, the ambiguity of the health coach and the rationale for the health coaching modality indicates the need for further health coaching research.

The various health coaching modalities have successfully been used independently (Barnett & Flora, 2017; Fera et al., 2009; Luder et al., 2016; MacLean et al., 2012; Wertz et al., 2012), and in combination (Akers et al., 2019; Bosmans et al., 2007; O. H. Brook et al., 2003a; Brook et al., 2005; O. H. Brook et al., 2003b; Engelhard et al., 2018; Pounds et al., 2015; Wennberg et al., 2010) to improve patient health outcomes. In order to promote the implementation and remuneration of health coaching services it is important to determine the most pragmatic modality, requiring minimal pharmacist training and time, but yet yielding the greatest improvement in the health outcomes for various patient groups.

Materials and Methods

Search Strategy

This systematic literature review followed the PRISMA guidelines (Moher et al., 2009). The databases CINHAL, EMBASE, PubMed, Psych INFO, and SCOPUS were systematically explored to identify the literature, which related to the method of health coaching used by pharmacists. The search of the databases involved three stages (Table 6.1). The initial stage of the search focused on health coaching and pharmacy, while the second stage focused on the pharmacist and pharmacy health coaching. The third stage was directed towards the modalities of health coaching and included the search terms; telephone, text message, video, short message service (SMS), face-to-face. The outcomes of the search stages were collectively evaluated.

Searches were limited to the publication period 2000 to present; this decision was based on the finding that the concept of pharmacist health coaching was not reported before this.

Table 6.1 Search Strings for Three-Stage Search

Database	Search Strategy
CINAHL	Search (health coaching AND pharmacy AND health) Limiters- English language, peer reviewed, research article Search (pharmacy health coaching AND pharmacist) Limiters- English language, peer reviewed, research article Search (pharmacist coach AND (telephone OR text message OR video OR SMS OR face to face) Limiters- English language, peer reviewed, research article Search (#1 AND #2 AND #3) filters: English; Peer Reviewed; Journal Article; Published Date 2000-present
EMBASE	Search (health coaching AND pharmacy AND health) Search (pharmacy health coaching AND pharmacist) Search (pharmacist coach AND (telephone OR text message OR video OR SMS OR face to face) Search (#1 AND #2 AND #3) filters: English, article
PubMed	Search (health coaching AND pharmacy AND health) Filters: humans, English, journal article Search (pharmacy health coaching AND pharmacist) Filters: humans, English, journal article Search (pharmacist coach AND (telephone OR text message OR video OR SMS OR face to face) Filters: humans, English, journal article Search (#1 AND #2 AND #3)
Psych INFO	Search (health coaching AND pharmacy AND health) Limiters: English, peer reviewed. Search (pharmacy health coaching AND pharmacist) Limiters: English, peer reviewed. Search (pharmacist coach AND (telephone OR text message OR video OR SMS OR face to face) Limiters: English, peer reviewed. Search (#1 AND #2 AND #3)

SCOPUS	Search (health coaching AND pharmacy AND health) Limit to article and English Search (pharmacy health coaching AND pharmacist) Limit to article and English Search (pharmacist coach AND (telephone OR text message OR video OR SMS OR face to face) Limit to article and English Search (#1 AND #2 AND #3)

Inclusion/ Exclusion Criteria

Papers were initially included if they were peer-reviewed and were published between 2000 to the present and contained the word "coaching" within the abstract, as this distinguished it as one of the main topics of the paper. The paper was also included if it referred to health coaching as per the concepts expressed in the grounded definition (Singh et al., 2019), such as patient-centred, facilitate, motivation, goal-setting, and behaviour change and, if they included text that referred to the modality of health coaching used by the pharmacist to coach patients. Papers were excluded if they: (1) were not published in the English language; (2) defined health coaching outside the context of pharmacy; (3) did not contain the term "coaching"; (4) were papers for which the full text could not be located, and (5) were grey literature. The inclusion and exclusion criteria used to identify abstracts and full papers is shown in Table 6.2.

Table 6.2. Inclusion and Exclusion Criteria for Obtaining Sources for Abstract and Full Paper Review

Inclusion	Exclusion
Sources published in print format or on the internet. Sources that include the key terms (patient-centred, facilitate, motivation, goal setting, behaviour change, improve health) used to define health coaching as per the grounded definition. Sources that refer to the pharmacist as the health coach. Sources containing text that refer to the method that the pharmacist used to health coach patients. Articles from 2000-present.	Sources published in a language other than English. Sources that define health coaching outside the context of pharmacy. Sources that do not include the word "coaching". Sources that do not define the method used to heath coach patients. Articles for which we could not source full text.

Quality of Studies

The Cochrane Handbook for Systematic Review of Interventions was considered when assessing the quality of the papers (Higgins & Green, 2011). Given the nature of the intervention being assessed, it was at times not feasible to blind participants and researchers, hence the reason for including non-randomised trials. The risk of bias of each paper included in this review was assessed as low. Furthermore, given the small number of studies in the field, the inclusion of all studies in our systematic review is valuable.

Data Analysis

A single researcher initially screened the title and abstract of all papers. The full-text copies of papers that passed the initial screening process were subsequently reviewed by two researchers independently. When a decision about a paper could not be reached the third researcher was consulted, a consensus was then reached with reference to the inclusion/exclusion criteria.

The data extracted from the studies included: (1) the country of the study; (2) participant population; (3) the modality of health coaching used by the pharmacist; (4) number of contacts between the

participant and the pharmacist health coach; (5); the duration of the health coaching sessions; (6) the details about the training given to the pharmacist to health coach, and (7) outcomes and impact of the study. Subsequently, the data were tabulated which allowed inferences to be made.

Results

Study Selection

Figure 6.1 shows the study selection process. There were 391 studies that were identified of which 234 were duplicates. After the removal of duplicates, the titles, and abstracts of 157 papers were reviewed. Sixty-one met the inclusion criteria; the full- text was retrieved and reviewed. Forty-eight papers were excluded, as they were not relevant, did not mention the modalities of health coaching used by the pharmacist. A total of 12 papers met the eligibility criteria, were included in the final review, and are summarised below in Table 6.3.

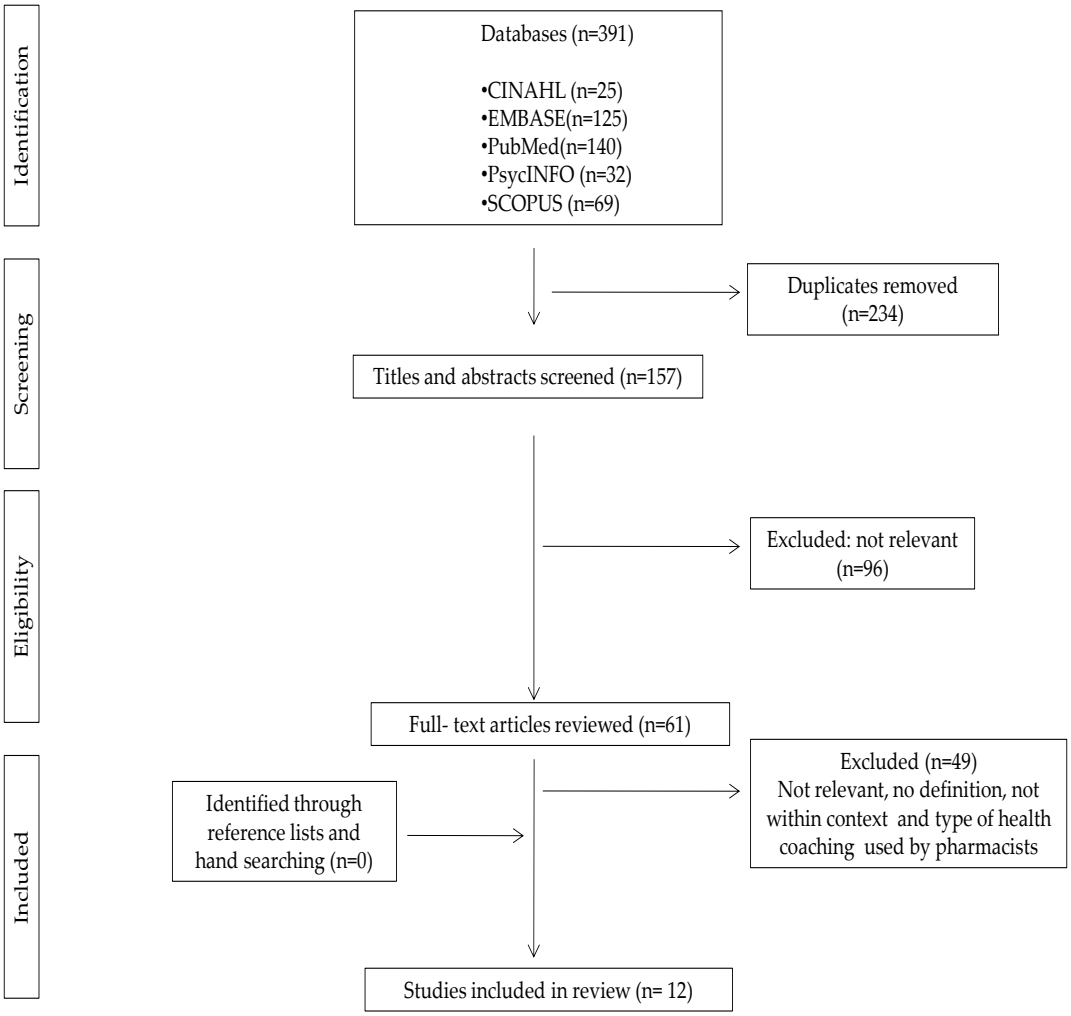

Figure 6.1. PRISMA Flow Chart of the Literature Search and Study Selection

Study Characteristics

Most of the studies included in this systematic review involved a combination of two or more health coaching modalities when health coaching patients (Akers et al., 2019; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Brook et al., 2005; Engelhard et al., 2018; Pounds et al., 2015; Wennberg et al., 2010). Four papers referred to face-to-face health coaching sessions with the pharmacist health coach (Barnett & Flora, 2017; Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012), and one study used only telephone coaching (MacLean et al., 2012). Given the paucity of the included literature, synthesis between articles was not always possible; hence, the results are presented as a description of individual studies.

Telephone Health Coaching

Only one of the studies included in this review exclusively used weekly telephone coaching sessions as the modality of health coaching (MacLean et al., 2012). The duration of this study was eight weeks and coaches were in their second year of study for the doctor of pharmacy (MacLean et al., 2012). Students received training to provide health coaching to participants who were previously part of an educational program for diabetes; on the road to living well with diabetes (OTR). Training also included specifics of diabetes self-management as well as a course about health communication, motivational interviewing, and problem-solving (MacLean et al., 2012). The student coaches followed a semi-structured guide, to coach participants, and the effectiveness of the telephone coaching was determined from an OTR questionnaire, the results of which were compared to a previous program, not supplemented with health coaching. The results showed that for participants with glycated haemoglobin (HbA1c) levels greater than 7.0% before coaching, the pre- to post change in HbA1c was 0.5% for subjects in the control group, and 1.3% for participants who were coached. Approximately half (50.1%) of the participants who had been coached expressed interest in having additional health coaching to help manage their diabetes (MacLean et al., 2012).The researchers reported that this modality to health coaching is a low-cost method, though did not specifically investigate the cost-effectiveness.

Face-to-Face Health Coaching

Four papers referred to the face-to-face health coaching sessions that occurred at a pharmacy (Barnett & Flora, 2017; Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012). Only one paper included in this review referred to health coaching provided by hospital pharmacists (Barnett & Flora, 2017). The hospital pharmacists received a two-day health coach training course, delivered by a health psychologist. Patients were allocated to groups; only patients receptive to information about the safe use of medicines, with immediate concerns and questions were provided with health coaching, supported by the 4Es model (explore, educate, empower enable). The outcomes of the study showed that patients reported being happy overall with the service. Pharmacists expressed greater satisfaction

with their consultations as they were patient-centred and focused on patient needs. Pharmacists also felt well utilised, not wasting time with patients unlikely to be receptive.

The remainder of the face-to-face health coaching studies were employer-initiated programs (Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012). Two of these studies investigated the outcomes of participants with diabetes or hypertension (Luder et al., 2016). In both studies, the pharmacist was trained to provide health coaching, although the specifics of training were not discussed. During the health coaching sessions, the pharmacist promoted lifestyle modification, education, medication adherence, monitoring of clinical outcomes as well as goal setting to improve health outcomes. However, each study had different endpoints (Luder et al., 2016; Wertz et al., 2012). One study evaluated patient health behaviours and beliefs that forecast interest in disease management services within pharmacy (Luder et al., 2016), while the two others explored the clinical and financial consequences of a pharmacist health coaching program (Wertz et al., 2012).

Depending on their current diabetes or hypertension status, participants in the health beliefs study were assigned to groups (Luder et al., 2016). Each group received health coaching by the pharmacist; monthly for patients regarded as having uncontrolled diabetes or hypertension and annually for patients regarded as having controlled diabetes or hypertension. The results showed that participants with controlled conditions had greater confidence in managing their health, while those with uncontrolled conditions experienced more barriers to managing their health. It was also reported that the mean expenditure per patient was reduced at the completion of the study.

In the study investigating the clinical and financial consequences of a pharmacist health coaching program, participants selected to receive coaching or the control condition (Wertz et al., 2012).. The control group participants did not receive coaching by the community pharmacist, while those within the intervention groups met with the pharmacist health coach regularly and had an average number of six visits with the pharmacist health coach. The results indicated that patients who were coached were more likely to have additions or changes made to their medications during the study period, indicating that they were more likely to be actively managed by their GP. Participants with hypertension that

received health coaching experienced a reduction in blood pressure from 136.1/83.5 mmHg at enrolment to 129.5/79.3 mmHg ($p < 0.05$) at end of study. Similarly, a reduction in low-density lipoprotein (LDL) was observed in enrolled patients with hypertension and diabetes; 104.1 to 97.2 mg/dL and 91.6 to 84.0 mg/DL, respectively. The HbA1c levels of participants with diabetes also improved from baseline (7.9%) to follow-up. (7.1%, $p < 0.05$) (Wertz et al., 2012). Despite the improvements to clinical parameters costs related to diabetes and hypertension increased during the study.

The fourth face-to-face study involved pharmacist health coaching in patients with diabetes (Fera et al., 2009). In this study, the pharmacist health coach received diabetes education training or was certified in diabetes care. The role of the pharmacist health coach focused on the clinical assessment of the patient's progress towards a clinical target and working with the patient to set personal health goals. The pharmacist health coaches met with their patients regularly; with an average of six patient-pharmacist visits over 14 months. The outcomes of the study showed statistically significant improvements for key clinical measures after a year; the mean glycosylated haemoglobin improved from 7.5% to 7.1% ($p = 0.002$). There was also an overall decrease in medical costs, which compensated for the new spending on professional pharmacist services (Fera et al., 2009).

Combination of Health Coaching Modalities

Seven studies used a combination of health coaching modalities to coach patients (Akers et al., 2019; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Engelhard et al., 2018; Pounds et al., 2015; Wennberg et al., 2010). In four of the studies newly diagnosed patients, commenced on a non-tricyclic antidepressant for the first time and received a take-home video in addition to three face-to-face health coaching sessions with the pharmacist in the store (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b). Reports on the training and education provided to the pharmacist health coach were different (Engelhard et al., 2018; Pounds et al., 2015; Wennberg et al., 2010). Two studies did not mention the training provided (Akers et al., 2019; Bosmans et al., 2007). While another two mentioned that pharmacists had formerly acquired the communication skills needed

to health coach (O. H. Brook et al., 2003a; O. H. Brook et al., 2003b). Each study had a different endpoint in terms of; cost-effectiveness (Bosmans et al., 2007), psychological symptoms (O. H. Brook et al., 2003a), drug attitude (O. H. Brook et al., 2003b) and adherence (Brook et al., 2005).

The study that specifically examined cost-effectiveness, reported that the costs incurred within the health coaching group of patients were higher in comparison to the control, though the difference was not statistically significant (Bosmans et al., 2007). In another study, medical costs were lower in the patients that received health coaching. This was attributed to fewer hospital admissions (Wennberg et al., 2010). Without having performed a cost analysis, one study reported that health coaching could reduce overall costs by supporting high-risk patients (Engelhard et al., 2018).

For the study investigating drug attitude, improvements in drug attitude inventory scores (DAI-30) were apparent at three months (O. H. Brook et al., 2003b), this correlated with improvements in psychological symptoms. Two-thirds of patients were in remission at six months approximately, and were satisfied with the service; 86% of the health coaching patients reported they would recommend the service to others (O. H. Brook et al., 2003a). However, in the study investigating adherence to antidepressants, the analysis showed that health coaching had no intervention effects on adherence (Brook et al., 2005).

Of the seven studies that used a combination of modalities to health coach, two used pharmacy students as the health coach. Each of these studies investigated the outcomes of health coaching on different patient populations; diabetes (Engelhard et al., 2018) and hypertension (Pounds et al., 2015). Students in both studies received health coach training, which included techniques of motivational interviewing, though the degree of training varied from two hours of online training (Engelhard et al., 2018) to six hours of face-to-face content (Pounds et al., 2015).

In the study investigating the outcomes of health coaching on patients with diabetes, the student health coaches initially met with the participants face-to-face and supplemented this with weekly phone calls, over a three-month period. During sessions, coaches helped patients set Specific, Measurable, Achievable, Realistic, and Timely (SMART) goals. At the completion of the study, nine out of the 12

participants reported that they successfully reached their personal goal. Participants also indicated that they would recommend the service to their friends/family (Engelhard et al., 2018).

As part of the protocol for the second study engaging students as the health coaches, participants initially received a weekly email, texts, and phone calls (Pounds et al., 2015). However, due to significant participant drop out and lack of follow-up, the method of health coaching was modified to face-to-face contact. Coaches subsequently met with participants collectively during weekly face-to-face group sessions. During sessions, coaches encouraged participants to make healthier choices and made recommendations to support the achievement of their goals. The outcomes of the study showed that students were confident in their ability to perform coaching (85%), though did not feel comfortable about educating patients about hypertension (86%). The students in this study received health coach training which included the techniques of motivational interviewing as well as disease state-specific training.

In another study, face-to-face in-home health coaching by a community pharmacist was supported by telephone calls (Akers et al., 2019). No specific training was provided to the pharmacists to engage in health coaching. During sessions, pharmacist's identified drug therapy-related problems and provided medication education. The pharmacists spent an average of 1.5 hours with the patients in their homes and had a 1-hour follow-up visit. Pharmacists discovered a mean of 11 drug therapy-related issues per patient.

Lastly, one study supplemented telephone coaching with web links, video, and print materials, including DVDs on collaborative decision making (Wennberg et al., 2010). The study did not allude to the training given to pharmacists to coach. During the study, pharmacist coaches instructed participants about shared decision making and motivated them to make behavioural changes. Patients included in this study had varying health conditions and were referred through their insurer health support service. Participants with chronic health conditions and / or high-risk health conditions received the most health coaching sessions. The study showed that mean costs to medical and pharmacy per patient that received

health coaching were 3.6%, (p = 0.05) lower than those that did not receive health coaching. This was attributed to the reduction in annual hospital admissions.

Table 6.3. Summary of Included Studies

Reference and country	Type of pharmacist health coaching	No. of sessions	Duration of session	Training provided to health coaches	Population being coached	Outcomes	Cost-effectiveness measured	Positives to the health coaching technique	Negatives to the health coaching technique
MacLean et al. (2012) United States	Telephone	Weekly	~10-20 minutes	Trained in motivational interviewing and problem solving	Diabetes	For participants with HbA1c levels > 7.0% before coaching, the pre to post-test change in HbA1c was 0.5% for control subjects and 1.3% for coaching subjects. 79.2% of coaching participants stated their coach helped better control their diabetes. 50.1% of the coaching group	The Paper concludes that student pharmacist health coaching is a low-cost method to improve self-management of diabetes but does not measure cost-effectiveness.	The service is sustainable using students as coaches. Improves patient care while providing a teaching environment for students. It provides social affiliation and support for patients, which is valuable for patients living in rural areas.	Although improvement in patient outcomes were observed at end of study (8 weeks), long term clinical impacts of telephone coaching is unknown. Participants initially wanted to achieve goals for the coach.

						participants expressed interest in receiving further coaching.			
Fera et al. (2009). United States	Face-to-face	μ=6	μ=51 min	Pharmacists required to complete an approved diabetes training program	Diabetes	Improvements in clinical outcomes.	Yes The average total care costs per patient were reduced.	Employer funded. Involved face-to-face sessions at various sites allowing flexibility in-patient care. Done privately. Direct assessment of clinical outcomes.	Sessions were long. Time-consuming. May require re-engineering of the pharmacy site to offer service.
Luder et al. (2016) United States	Face to face	Monthly for uncontrolled patients Annually for controlled patients	No mention	No mention	Patients taking at least one medication for diabetes/ hypertension.	Patients with controlled conditions had more confidence. Patients with uncontrolled conditions had more barriers	No	Employer funded. Patients received financial incentives for participation.	Patients may have tried to please the coach and responded more favourable to questions.

						to managing their health. African American patients had more confidence (4.44) in performing health behaviours than white patients (4.21) p-value 0.28. Patients with uncontrolled conditions were more likely (3.47) to enrol when financial incentives were offered compared to the controlled group (3.23. p-value 0.261).			
Barnett and Flora (2017)	Face-to-face	1	No mention	A health psychologist delivered a two-day training course.	All hospital pharmacy patients.	Patients were happy with the consultation.	No	The service was provided in a hospital pharmacy.	Lack of privacy during service provision.

United Kingdom								Patients were coached according to receptivity to the service.	
Wertz et al. (2012). United States	Face-to-Face	μ= 8.1 +/- 5.2	No-mention	No mention	Diabetes /hypertension	Patients were more likely to have additions or changes to their medications.	Costs related to hypertension and diabetes were increased.	Employer-sponsored service.	Short term increase in costs at the initiation of the service.
O. H. Brook et al. (2003b) Denmark	Face-to-face and take-home video.	3	No mention	Nil. States pharmacists already have the communication skills to health coach.	Newly diagnosed patients starting on a non-tricyclic antidepressant for the first time.	Improvement in drug attitude inventory (DAI) score.	Cost-effectiveness studies were not performed. Though reports that similar interventions can have significant changes in patient's drugs, which saves more than the cost of the intervention.	Pharmacists were capable of coaching patients alongside conventional duties.	Coaching may affect the daily routine of the pharmacy. The pharmacist's busy schedule may make it difficult to make follow-up appointments and the setting may hamper confidential conversations.

Akers et al. (2019) United States	Home visits and telephone	Variable- depended on the mode of referral	M =1.5 hours	No mention	Depended on the mode of referral.	Pharmacists identified more drug therapy related problems.	No	Health coaches were reimbursed by community-based organisations. Pharmacist coaches provided high-level care outside the traditional pharmacy setting.	Access to patient history was required prior to the home visit. Requires travel of the coach to the patient's home. Travel costs will be incurred. Requires laptop, tablets, and/or wireless internet connection.
Engelhard et al. (2018) United States	Face-to-face and telephone	Variable	No mention	Two-hour online training-motivational interviewing techniques as well as disease state-specific training.	Diabetes	Coaches helped patients reach their goals and patients would recommend the service to their friends/ family.	A cost-effectiveness study was not performed. States that health coaching with pre-med students showed that support to high-risk patients helped to	Coaches learned to provide support to those managing chronic illnesses.	Training is not generalisable to a broader audience and has not been accredited by an outside body. Coaches and patients felt pressured to please each other.

							reduce overall health care costs.		
Bosmans et al. (2007) Netherlands	Face to Face and take-home video.	3	μ= 13 and 20 minutes	No mention	Newly diagnosed patients starting on a non-tricyclic antidepressant for the first time.	No significant difference in adherence to antidepressant medication.	The costs in the intervention group were higher.	The intervention was easy to implement.	Coaching may affect the daily routine of the pharmacy. The pharmacist's busy schedule may make it difficult to make follow-up appointments. The pharmacy setting may hamper confidential conversations.
O. H. Brook et al. (2003a) Denmark	Face to Face and take-home video.	3	No mention	Pharmacists already have the communication skills to health coach	Newly diagnosed patients starting on a non-tricyclic antidepressant for the first time.	Coaching was more effective in patients with lower education levels.	No mention	Pharmacists were capable of coaching patients alongside conventional duties.	Coaching may affect the daily routine of the pharmacy. The pharmacist's busy schedule may make it difficult to make follow-

									up appointments. The pharmacy setting may hamper confidential conversations.
Pounds et al. (2015) United States	Face to face, email, texts, and telephone phone calls.	Weekly sessions with student pharmacists	1 hour	Six hours of training-motivational interviewing techniques as well as disease state-specific training.	Hypertension	Students were confident in their ability to perform coaching (85%), though did not feel comfortable about educating patients about hypertension (86%).	No mention	Students were able to confidently coach patients.	Students may need additional training to prepare them for challenges associated with engaging individuals about making changes to their health.
Wennberg et al. (2010) United States	Telephone coaching supplemented with web-links, video, and print materials.	Variable; 5 sessions for patients in the enhanced support group and 3 sessions for those in the usual support group.	No mention	Training was provided, but no details on specifics.	Various medical conditions.	The average monthly medical costs were lower in patients in the enhanced support group.	The average monthly medical costs were lower in patients in the enhanced support group. The reduction in costs was attributed to a	The telephone sessions were supplemented with additional modes of delivery according to patient needs.	The patient's required health insurance to receive the service.

							reduction in hospitalisation		

Discussion

The relative paucity of the data on the process of health coaching by pharmacists should be noted. Indeed, some studies report health coaching interventions provided by pharmacists, though the specifics regarding training and facilitation of the service are often underreported, further, clinical outcomes were reported in only 8 of 12 studies (Akers et al., 2019; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Fera et al., 2009; Luder et al., 2016; MacLean et al., 2012; Wennberg et al., 2010; Wertz et al., 2012). Without this, difficulties arise when comparing study outcomes as a result of the inconsistencies between them. Thus, the results of this review reveal that the conclusions about the most pragmatic modality of health coaching are not possible.

Variations were apparent in the number of health coaching sessions that pharmacists had with patients; ranging from 1 (Barnett & Flora, 2017) to 8.2 +/- 5.2 (Wertz et al., 2012). However, regardless of the number of health coaching sessions patients had with the pharmacist coach, they experienced an overall improvement in health outcomes (Akers et al., 2019; O. H. Brook et al., 2003b; Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012) and, or experiences (Barnett & Flora, 2017; Engelhard et al., 2018; Luder et al., 2016).

Most pharmacist health coaching studies utilised a combination of modalities to coach patients (Akers et al., 2019; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Engelhard et al., 2018; Pounds et al., 2015; Wennberg et al., 2010); including face-to-face contact with the pharmacist (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Pounds et al., 2015), supplemented with telephone coaching (Engelhard et al., 2018; Pounds et al., 2015), videos (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b) , email(Pounds et al., 2015), print materials (Wennberg et al., 2010), texts (Pounds et al., 2015) web links (Wennberg et al., 2010), and DVD's (Wennberg et al., 2010). Similar, to the number of health coaching sessions, favourable outcomes were reported in each study regardless of the health coaching modality, or a combination thereof used.

Consequently, there does not appear to be an ideal number of health coaching sessions or a superior modality of pharmacist health coaching. In each instance, the pharmacist health coaching intervention provided patients with the support and guidance to achieve their health goals (Akers et al., 2019; Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Engelhard et al., 2018; Fera et al., 2009; Luder et al., 2016; MacLean et al., 2012; Pounds et al., 2015; Wennberg et al., 2010; Wertz et al., 2012).

This review did not explicitly focus on the cost-effectiveness of the pharmacist health coaching modalities. Considering limited studies reported on cost-effectiveness, it is not possible to draw any definitive conclusions. However, despite the variability in clinical outcomes, the economic value of professional pharmacy services is well established as they reduce resource utilisation and costs (Touchette et al., 2014). For this reason, it is reasonable to suggest that health coaching would perform similarly. Comparable to professional pharmacy services such as vaccination, costs will be incurred at the initiation and delivery of pharmacist health coaching, which would be recuperated with prolonged service delivery, reducing costs to healthcare infrastructures.[49] Additional research is needed to investigate the long-term benefits and financial implications of pharmacist health coaching modalities (Wagner et al., 2016).

Given the difficulty associated with following up patients, it would be more pragmatic and efficient to implement health coaching modalities not requiring face-to-face contact with the pharmacist (Watkins et al., 2020; Wennberg et al., 2010).

Moreover, electronic modalities of health coaching are more likely to ensure continuity as they are of greater convenience to patients. The health coaching modality, may, however, pose challenges in building rapport, between the patient and the pharmacist health coach, without which patient accountability and engagement in such services are otherwise poor (Bajorek et al., 2017). However, by identifying factors that affect patient health management, pharmacists can facilitate appropriate health care and education delivery (Penn et al., 2011). One study was confronted with a similar setback, whereby the health coaching modality within the study protocol was changed from telephone coaching

to face-to-face meetings with the pharmacist health coach. This enhanced patient follow-up during the study as well as the engagement of the pharmacist health coach (Pounds et al., 2015).

Contrary to this, a study that exclusively utilised the modality of telephone health coaching showed that patients experienced improved health outcomes; a decrease in HbA1c levels (MacLean et al., 2012). Further, there was no mention of patients being lost to follow-up or difficulties in doing so. This is a reasonable outcome, as telephone coaching has shown to be convenient for patients with the absence of travel and associated costs (Collett, 2008). Therefore, considering only one study reported on the challenges of electronic modalities of pharmacist health coaching further research in the area is warranted.

Similar to this review, other studies have investigated the various modalities of consultations. These studies have shown that the use of video techniques produces similar outcomes in terms of nature and composition of the sessions, though like telephone sessions would not be appropriate for health problems requiring physical consultations (Hammersley et al., 2019). The main issue that video techniques bear is the initial infrastructure costs and intermittent technical issues, which is not an issue for telephone consultations or health coaching sessions (Andersen & Medaglia, 2009). However, video consultations are being increasingly adopted as they compensate for barriers pertaining to patient access to healthcare such as geography, environmental issues, and physical in-capabilities (Calton et al., 2020; Phul et al., 2004). It also overcomes the barriers associated with the professional isolation health practitioners in rural localities experience (Phul et al., 2004). Though, when given the option, telephone interventions were more popular in individuals over the age of 50 (Hammersley et al., 2019). Given that chronic health conditions affect older populations, it is reasonable to suggest that telephone health coaching would be the most suitable modality in this group. Despite the benefits of telehealth care, some studies have shown poor (Pounds et al., 2015) or declined usage over time; (Canzanello et al., 2005; Friedman et al., 1996) for patients with comorbidities and complications, interpersonal contact may be more appropriate. (Lu et al., 2014) Notably, a recent US-based health coaching study showed that face-to-face coaching was effective in improving health outcomes in patients with complex health conditions (Watkins et al., 2020).

Despite the inability to draw conclusions about the most efficacious and economically valuable modality to health coaching, arguably it is most important to acknowledge the patient's choice as health coaching is a patient-centred service (Singh et al., 2019). Furthermore, the demand for additional choice broadens to health care delivery. Evidence shows that patients have varying needs and expectations of pharmaceutical services. Therefore, even while one health coaching modality could be better than another, the choice of delivery should be left to the patient (Phul et al., 2004). Hence, there is a need for patient satisfaction to be investigated more rigorously, along with other dimensions of the patient experience (Raven et al., 2013). With regards to health coach training provided to the pharmacists, reports were inconsistent. Not all qualified pharmacists that took part in the health coaching studies received training (Akers et al., 2019; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; Wennberg et al., 2010). The specifics for those that did receive training were unclear (Barnett & Flora, 2017; Fera et al., 2009; Luder et al., 2016; Wertz et al., 2012). However, irrespective of the health coaching modality used by the student pharmacists to health coach, all received training. The training featured the concept and process of motivational interviewing (Engelhard et al., 2018; MacLean et al., 2012; Pounds et al., 2015). Including this as part of a health coach training program is valuable, considering it is a communication technique which can facilitate the behaviour change process during health coaching (Neuner-Jehle et al., 2013).

Therefore, from the data, it was not possible to determine the level of training required for each health coaching modality, as details were underreported.

The modalities of pharmacist health coaching included in this review varied as did the endpoints of the studies. Despite this, each study reported an overall improvement in the clinical outcomes of patients with diabetes (Engelhard et al., 2018; Fera et al., 2009; Wertz et al., 2012), hypertension (Wertz et al., 2012), high cholesterol (Wertz et al., 2012), and depression (O. H. Brook et al., 2003a). Pharmacist health coaching also encouraged improvements in non-clinical outcomes including medication adherence (Luder et al., 2016), attitude towards drug therapy (O. H. Brook et al., 2003b), medical costs (Fera et al., 2009; Wennberg et al., 2010) and patient satisfaction towards the service (Barnett & Flora, 2017; O. H. Brook et al., 2003a; Engelhard et al., 2018). This proposes that pharmacists can successfully

health coach patients with a range of health conditions and can facilitate an improvement in several clinical and non-clinical measures. However, considering the disparities amongst study protocols it was not possible to determine the most pragmatic modality of health coaching, suggesting that further research is warranted in this area.

Limitations

A systematic method was used to conduct this literature review. A small range of search strings and terminology were agreed upon by the research team. This made identifying articles within the databases and specific to health coaching manageable. Since, this may be considered a limitation, where important information may have been overlooked; the full search string has been included which allows for replication. The use of the key terms to guide the selection of papers for the review may be considered as a limitation to the selection of eligible articles. However, these key terms were used to define health coaching as per the grounded definition published within the literature. The search strategy for the review spanned 20 years, during this time considerable changes to health care systems of the countries included would have occurred which could have influenced the articles that were selected. To further minimise bias two independent reviewers carried out the final review and selection of papers. The small sample size used for this review may also be considered a limitation; however, in light of the predetermined, thorough, and transparent search strategy used, the sample size is justified. Lastly, considering there is no standard process for the analysis and reporting qualitative data in a systematic review (Garside, 2014), the inclusion of a non-randomised study in this review is justified (Wertz et al., 2012). Although participant self-selection biases could have influenced the outcomes of this study it is important to acknowledge that as a professional pharmacy service, health coaching is to be provided to patients if they choose to receive it. For this reason, the outcomes of this type of study would be a realistic representation of pharmacist health coaching service delivery.

Conclusions

In this review, we take a pragmatic modality as to the modalities used for pharmacist health coaching interventions. We hope that in recognising the variability in reporting amongst the included studies

future pharmacist health coaching studies have more rigorous study designs. Studies, which document the training, the modality, the outcomes, and the cost benefits of coaching by pharmacists, are warranted to enable more comprehensive evaluation and quality decision making around health coaching modalities provided by pharmacists. Fundamentally, pharmacists must recognise the patient's preference in the modality used as health coaching is a patient-centred service. Since the details of the health coach training provided to pharmacists were not always clear, it was not feasible to determine the health coaching modality for which there were minimal training requirements.

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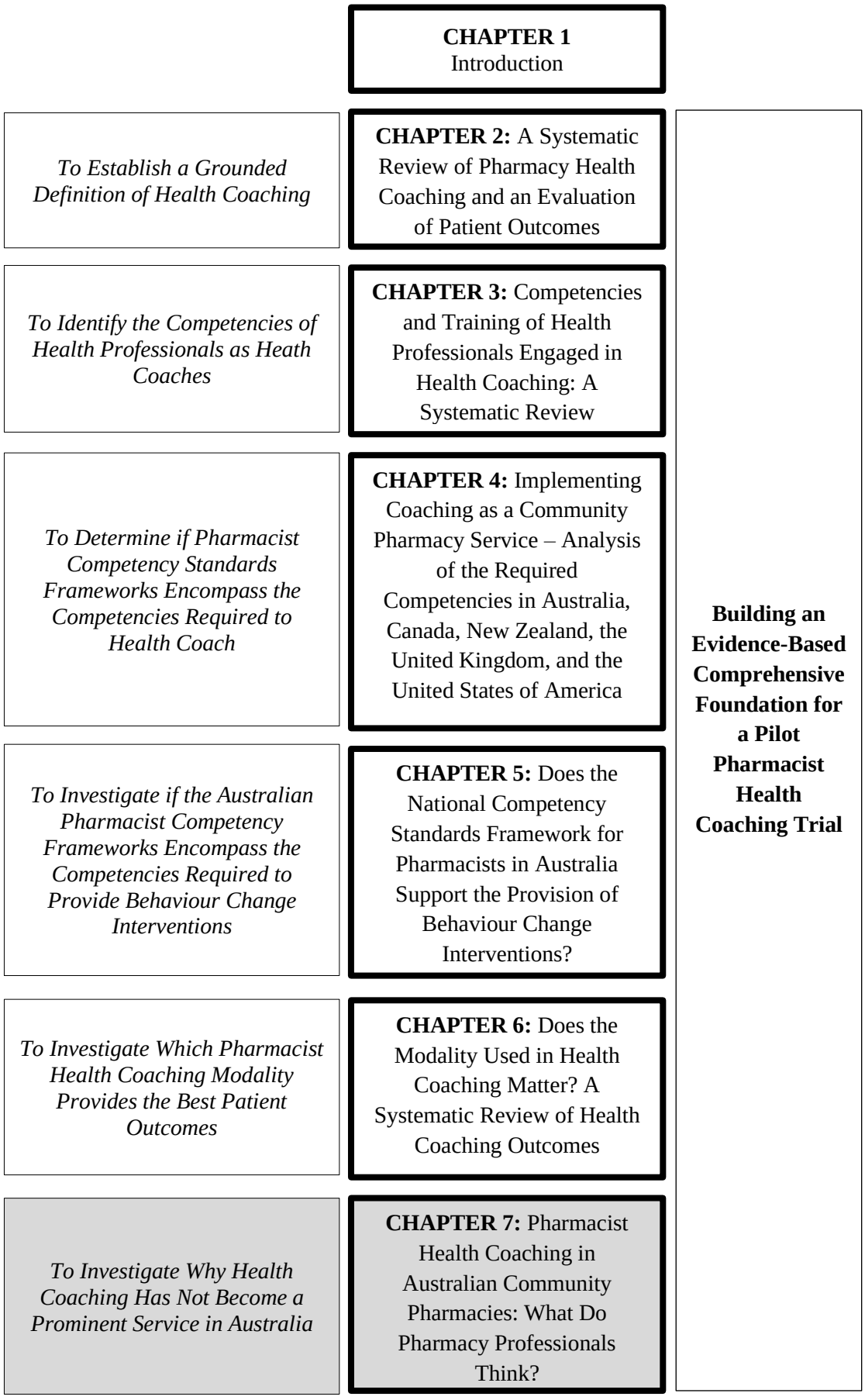
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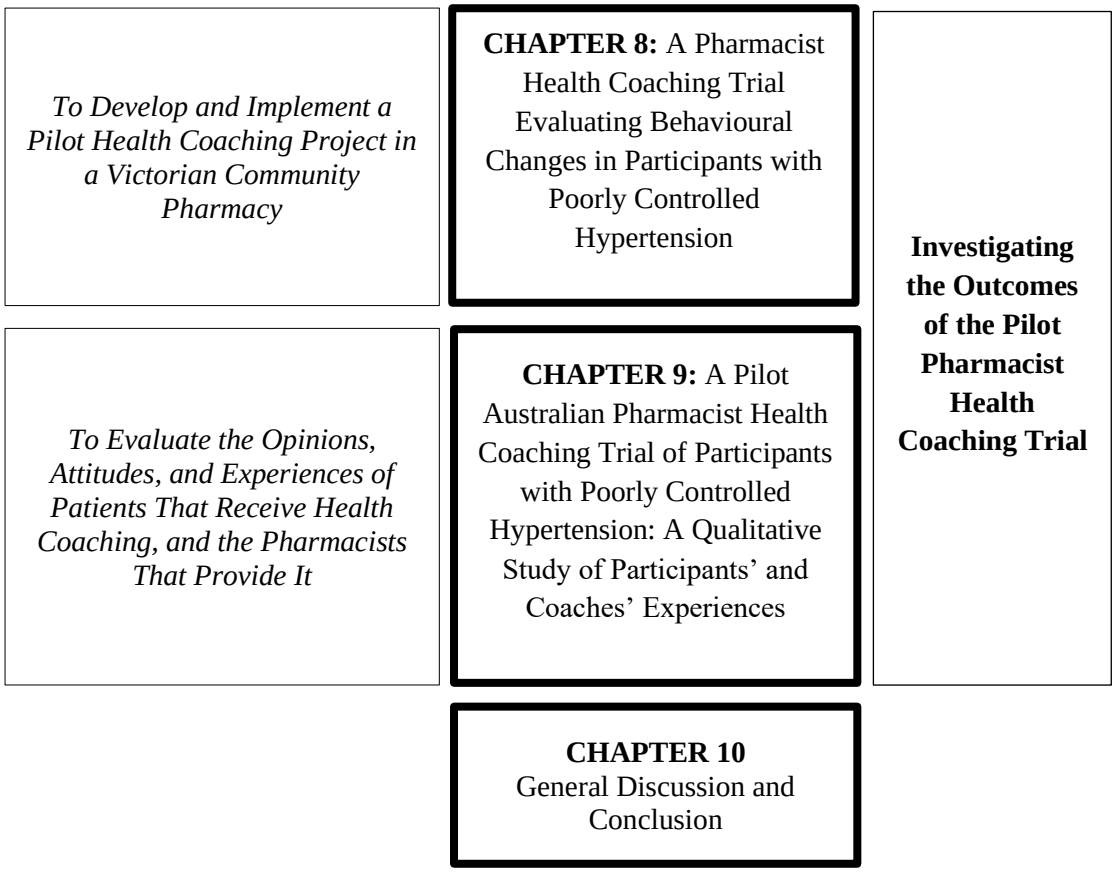
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CHAPTER 7

Pharmacist Health Coaching in Australian Community Pharmacies: What Do Pharmacy Professionals Think?

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Contributions of each author:

Contributor	Statement of contributions
Singh, H. K	Compilation of interview questions (30.3%) Conduct interviews (100%) Transcription of interviews (100%) Review and analysis of data (75%) Drafting and editing of paper (70%)
Kennedy, G. A	Compilation of interview questions (30.3%) Review and analysis of data (5%) Drafting and editing of paper (10%)
Stupans, I	Compilation of interview questions (30.3%) Review and analysis of data (20%) Drafting and editing of paper (20%)

Chapter Overview

Internationally, pharmacist health coaching services have produced beneficial health outcomes when provided to patients with chronic health conditions. Despite this, the service is not currently provided within Australian community pharmacies. Therefore, it is important to determine the reasons for this to advance the implementation of the service into community pharmacy practice in Australia.

This chapter outlines the qualitative results of an interviews study with pharmacy professionals. Thematic analysis of the interview transcripts revealed that there are several barriers, but also facilitators to the provision of health coaching within the Australian community pharmacy. These factors would need to be considered during the preparatory stages of a pilot health coaching trial (chapter 8).

Contribution to Practice

The outcomes of this research raise awareness about health coaching within the Australian pharmacy profession. It also identified several issues; lack of pharmacist time, training, and remuneration, which would need to be considered to facilitate the provision of the service through the Australian community pharmacy.

Abstract

Health coaching is a service provided to patients by health care professionals for the purposes of disease management and health risk prevention. Internationally, pharmacist health coaching services provided to patients with chronic health conditions have produced beneficial health outcomes. Despite this, the service is not currently provided within Australian community pharmacies. This study evaluates the knowledge, opinions, and attitudes of leaders within the pharmacy profession about the concept of health coaching as a service in community pharmacy. Semi-structured interviews with leaders in the pharmacy profession were carried out. Pharmacy leaders were interviewed until data saturation was reached; ten pharmacists were interviewed. The interviews were transcribed verbatim and analysed thematically; extracts from the transcripts were compared and categorised to establish themes and subcategories. Analysis of the transcripts indicated the emergence of two main themes and ten subcategories. The main themes were: "positive view of health coaching in Australian community pharmacy" and "barriers to integrating health coaching into Australian community pharmacy". There was an overall perception that health coaching within community pharmacies would be valued by the Australian community. Interviewees held differing perceptions of pharmacists' capability to effectively coach pharmacy clients and suggested that the main impediments to its introduction related to remuneration for the service. The findings indicated that there is the potential for pharmacists to provide a health coaching service in community pharmacies, but that remuneration is a fundamental barrier. The research also indicated the need to clearly identify the knowledge, skills, and attitudes needed to health coach and to identify if potential gaps in the competencies of Australian community pharmacists exist.

Keywords: patient-centred care, pharmacist roles, chronic illness management, qualitative research, community pharmacies, health services

What Is Known About This Topic?

- Pharmacist health coaching services are offered in the United States of America, the United Kingdom, Canada, and the Netherlands.
- Pharmacist health coaching services have produced positive health outcomes in patients with chronic health conditions.

What This Paper Adds

- The reasons why pharmacist health coaching is not exclusively offered within the Australian community pharmacy were identified.
- Pharmacists had positive views of health coaching in the community pharmacy, though identified barriers to its integration into Australian community pharmacy practice.
- There is a need for further research into the area of pharmacist health coaching to facilitate remuneration and practice of the service within the Australian community pharmacy.

Introduction

Chronic diseases are the leading cause of death worldwide (Lopez & Murray, 1998). The most common of these include cardiovascular disease, cancer, chronic respiratory disease, and diabetes. The prevalence of these preventable chronic diseases has been linked to unhealthy behaviours (Wolever et al., 2013). This has put a significant strain on healthcare infrastructures globally (Wolever et al., 2013). Preventing and managing chronic health conditions have since become a global priority (Strong et al., 2006).

Pharmacists are comprehensively trained healthcare professionals and are at the frontline of the primary healthcare system. They are also highly accessible and are conveniently available to patients without the need of an appointment (Dalton & Byrne, 2017). Although, pharmacists are comprehensively trained health care professionals, their skills are often overlooked (Mak et al., 2013; Roberts et al., 2006). The concept of pharmacists moving beyond their traditional dispensary duties was first introduced in the 1980s. It was proposed that pharmacists extend their role to the provision of services such as medication reviews, screening, in-depth counselling sessions, and medication education (Spencer & Edwards, 1992). Health coaching; a veteran concept of the 1950s, has gained some attention within pharmacy across several countries, but not in Australia (Janeway, 1951).

Community-based programs instigated by the pharmacist have been proposed as a solution to the burden of chronic disease within communities as well as the health care infrastructure (Department of Health & The Pharmacy Guild of Australia, 2015; Dowrick et al., 2005). In Australia, these programs are categorised as ‘professional pharmacy services’, and are defined as services in which pharmacists use their skills and knowledge to take an active role in contributing to patient health through effective interactions with both patients and or health professionals (Feletto et al., 2010).

Over the past decade, pharmacists in Australia (Howarth et al., 2005) have introduced several initiatives that have improved the health and wellbeing of the community. An example of this is the introduction of pharmacist vaccination services (Hattingh et al., 2016; Howarth et al., 2005). The service was introduced to improve accessibility to vaccinations to prevent the spread of disease within the

community (Hattingh, Sim, et al., 2016). Evaluation of the service showed that immunisation rates against influenza in the areas where pharmacists provide vaccinations increased, for individuals aged greater than 65 years. The increase in vaccination rates has consequently reduced deaths and hospitalisations in elderly people. Therefore, the provision of health services through the community pharmacy translates to an improvement in patient health as well as savings due to reductions in medical costs (Dalton & Byrne, 2017).

Health coaching is a service that is provided to patients by health care professionals for disease management and health risk prevention. It involves a collaborative patient-centred interaction between the patient and coach for the purpose of a behavioural change through the process of goal setting and follow-up (Singh et al., 2019). Health coaching differs from other lifestyle improvement programs and services offered by health professionals as it can be individualised to a patient and can be adapted or changed to suit the circumstances and surroundings of the patient (Vale et al., 2005).

Pharmacists are in an ideal position to offer professional pharmacy services such as health coaching. Health coaching by pharmacists has produced successful outcomes for patients in the United States of America (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012), Netherlands (Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b), United Kingdom (UK) (Barnett & Flora, 2017), and Denmark (O. H. Brook et al., 2003b). Most studies have evaluated the outcomes of pharmacist health coaching interventions in patients with chronic health conditions. These include depression, diabetes, hypertension, and hyperlipidaemia (Barnett & Flora, 2017; Bosmans et al., 2007; O. H. Brook et al., 2003a; O. H. Brook et al., 2003b; DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012).

However, at present, no health coaching interventions run by community pharmacists in Australia have been described in the literature. The purpose of this research was to extend the understanding of health coaching and its potential provision within community pharmacy in Australia. Therefore, we interviewed leaders from the pharmacy profession to determine their knowledge and opinions of and attitudes towards health coaching within the Australian community pharmacy.

Aims

1. To investigate the understanding that leaders in the pharmacy profession and professional pharmacy organisations in Australia had about health coaching.
2. To identify the potential barriers to health coaching being offered in Australian community pharmacies.

Methods

Ethics Approval

This exploratory qualitative research project involved semi-structured interviews with pharmacy professional leaders. Ethics approval for this protocol was received from the Royal Melbourne Institute of Technology (RMIT) University ethics committee. (HREC 36-18).

Participants and Recruitment

A purposive sampling strategy was used to establish a list of leaders within the Australian pharmacy profession from pharmacy organisations.

The list included position holders and leaders from peak organisations and regulatory authorities. Leaders from other organisations representing both employee pharmacists and pharmacy owners were also included, as were position holders within the federally funded National Prescribing Service. Professors of Pharmacy Practice from several different universities were also included. The contact details were obtained from online public sources.

Twenty-three stakeholders were approached via email and invited to participate in an interview. Eleven stakeholders responded to the email, of whom one declined the invitation.

Interviews

The semi-structured interviews were conducted between July 2018 and November 2018. The participant consent form provided a brief overview about health coaching ensuring that each participant had the

same baseline understanding of health coaching. Interviews were undertaken by a member of the research team either face-to-face or over the telephone at the convenience of the stakeholder.

An interview questions guide was developed to help guide interviews and to ensure data collection was standardised and systematic (Patton, 1990). The guide (see Appendix 2) was prepared based on the study objectives and the preliminary research conducted within the area of health coaching. Themes covered in the interview guide were knowledge about health coaching, attitudes, and opinions about health coaching as a service within the pharmacy, and potential measures to expedite the service into pharmacy practice. Probing using follow up questions was used to encourage the interviewees to elaborate and clarify responses that were otherwise unclear or ambiguous. This ensured that the data gathered would be appropriately interpreted and analysed.

Data Analysis

The digitally recorded interviews were manually transcribed verbatim and de-identified by one team member. The thematic analysis method was then chosen to analyse the data (Maguire & Delahunt, 2017). The transcripts were read repeatedly, and relevant words and phrases were extracted. These were collated and combined to form categories. The categories were derived inductively; that is, from the data. The categories were organised into main themes, and interviews were continued until saturation was reached for the key emergent themes and opinions. Saturation was reached after eight interviews.

The initial categorisation was done by one researcher. The two other researchers then participated in crosschecking of the analysis and came to a consensus on areas of disagreement. After initial categorisation, some subcategories were rearranged, renamed, and merged (Marshall & Rossman, 2014). Analysis and categorisation was conducted throughout the data collection period.

The results are illustrated by quotes from the interview. Each stakeholder was given a number, which is given after each quotation.

Findings

A total of 10 key leaders were interviewed for the study. Interviews were undertaken at a time and place convenient for participants, either face-to-face (*n* = 2) or via telephone (*n = 8).* The interview duration averaged 25 minutes (range 19-37 min). Interviewees were from different professional backgrounds; two were women, and eight were men, some continued to practice, and all held general pharmacist registration. After analysis of the transcripts, two main themes emerged "positively viewed role of health coaching in Australian community pharmacy" and "barriers to integrating health coaching into Australian community pharmacy", presented in Table 7.1. Subcategories are italicised in the following text.

Table 7.1. Themes and Categories

Main theme	Subcategories
1. Positively Viewed Role of Health Coaching in Australian Community Pharmacy	Health Literacy
	Pharmacist Skills
	Management of Chronic Disease
	Preventative Health
	Accessibility
2. Barriers to Integrating Health Coaching into Australian Community Pharmacy	Welfare
	Pharmacist Knowledge
	Time
	Business Model
	Remuneration

4.1 Positively Viewed Role of Health Coaching in Australian Community Pharmacy

Most interviewees had a positive attitude towards the role that health coaching could play within the community pharmacy. They acknowledged that a considerable problem amongst patients is the lack of health literacy skills. They also expressed that pharmacists play an integral and unique role in the community and also conduct health interventions. Furthermore, it was recognised that since health coaching involved a comprehensive approach to the management of a health condition it could facilitate an improvement in *health literacy* and encourage patients to be proactive towards their health. This

included the improvement in patient autonomy, whereby the patient's ability to manage their own health and medical condition is enhanced.

> "There is an intention gap by many in the population. Health coaching could help in bridging and addressing that intention gap." [01]

> "Educating the public about the benefit of having health checks and the value of it." [02]

> "It's about educating people to understand health literacy." [04]

Interviewees proposed that the service could be advantageous when used for both the *prevention and management of a chronic disease*. It would allow patients to learn beneficial habits and techniques to prevent complications and better manage their health.

> "Guidance and motivation and support [through health coaching] to help change habits and lifestyle would better help control chronic diseases." [01]

> "I see that benefit is educating them more clearly about their own diet and exercise and the power that they have to prevent illness themselves……. It's a preventative health approach to help people to prevent disease from occurring by taking charge of their own health." [07]

It was recognised that the *accessibility* of the pharmacist within the community was the main reason that pharmacists were in an ideal position to provide services such as health coaching, as often pharmacists are the patient's first point of contact with the health care system. For this reason, patients would be more likely to accept health coaching services.

> "Most assessable health professional and we motivate people about their health anyway." [06]

> "Ease of patient access to go to a community pharmacy. Pharmacists are trusted and very knowledgeable." [01]

> "Pharmacy has good accessibility and because of this patients are coming into the pharmacy regularly for their medicines anyway." [07]

Interviewees also recognised that health coaching could consolidate the advice and instruction that health care providers give patients as it involves a *collaborative care* approach to the management of a patient's health. This would lead to better health outcomes for patients. The introduction of the health coaching service within community pharmacy was also considered to be a way to reduce the workload on doctors.

> "I think that there should be more collaboration between the GP, the pharmacist, and other healthcare providers so that everybody is working in the same direction to give the best health outcome for the patient… I think that when we look at the aging population and the stress on the GPs now if we don't start thinking of innovative ways to address primary healthcare, the system is going to fall over." [01]

> "I think collaborative goals are a nice way to say that you know the patient in collaboration with their health care provider who is trying to identify goals that are achievable and that improves health while achieving a target." [03]

When asked about the skills required to health coach the main qualities that emerged were communication skills, empathy, clinical and medicine knowledge, as well as experience. Most interviewees then stated that pharmacists had most of the *attributes* required to health coach.

> "They [pharmacists] need empathy; they need to refrain from being direct. I think anyone has that capability because there must have been a reason that they became a health professional to start with." [01]

> "I think pharmacists are highly trained, they do have the skills, and they do have the experience and skills come with experience." [02]

> "They [health coaches] need communication and good knowledge of the disease state and clinical knowledge as well." [04]

> "[Pharmacists] understand the national guidelines for the treatment of the various conditions, the therapeutic guidelines of medication management for various conditions, and understand

> the shared care approach… They do have the skills and competency, depending on the level and depth of material" [08]

4.2 Barriers to Integrating Health Coaching into Australian Community Pharmacy

Some interviewees expressed concerns about the *welfare* of patients receiving health coaching. These concerns related to the patient-centred approach on which health coaching is based. Interviewees suggested that patients were unqualified to set their own health goals and that doing so could pose additional health issues to them.

"Terminology is one of the parts that make it difficult for patients to understand health. I think patients don't know what they don't know." [01]

"It's not about setting the inspirational goal that you won't be able to achieve… it's not easy if you're not trained in health coaching to set the goals." [03]

Another obstacle proposed by interviewees, that could influence the integration of health coaching into the collection of professional services offered through community pharmacy, was the pharmacist's lack of *time* outside of conventional pharmacist duties, and the provision of remunerated services. Interviewees stated that although valuable to the patient, services such as health coaching were not viable for businesses, as they are inconvenient and not part of a *remuneration* scheme at present.

> "Time available to the pharmacist; pharmacists are really busy." [02]

> "We're not funded for health coaching" [03]

> "Time is the tricky thing. With community pharmacy, you can't predict when things walk through your door." [06]

Interviewees acknowledged that at present, the lack of remuneration for services such as health coaching was mostly attributed to the lack of evidence base for clinical efficacy. It was suggested that further research needs to be conducted on health coaching within community pharmacies.

> "To establish some of that evidence base, but then it needs to translate into what this looks like financially." [02]

> "Coaching is an expensive process. It is a high-cost intervention. I think you can only justify spending that money where you will be getting an adequate return." [04]

> "To get remuneration from a fund holder you have to demonstrate the value and cost-benefit of investing in it." [07]

Many interviewees acknowledged that the *business model* of the pharmacy influences the provision of professional pharmacy services such as health coaching. They stated that it would be difficult to find a pharmacy at present to implement a service unless it was remunerated and offered a return on investment.

> "You have to pick your market and recognise that it's business and there are some models that would not find this interesting". [06]

> "We work with a lot of different pharmacy groups, and invariably the message that we get from them is that anything that they roll out they want their members to see it as being a benefit." [07]

The lack of *training* that Australian pharmacists have about the fundamental concepts involved in health coaching was brought up by interviewees and considered a barrier to the implementation of health coaching within the Australian community pharmacy. These concepts include motivational interviewing, the psychological concepts of behaviour change, and sociology.

> "What we're talking about with coaching is the need to be able to read somebody's behaviours, emotions, and psychology." [04]

> "The pharmacists needed skills in communication and psychology and sociology to be able to do that [health coaching] well. Most pharmacists do not get a lot of expertise or education and

> training in that space, and often when they do, it's provided by other pharmacists rather than people who are experts in counselling or communication or psychologists." [05]
>
> "I think the bit that we don't have much experience in is the motivational interviewing, which is a really fundamental part of health coaching" [06]

Discussion

This study provides a broad and coinciding perspective of ten key interviewees. It presented the main barriers to integrating health coaching into the Australian community pharmacy, as well as the positive roles that health coaching could have when offered within the Australian community pharmacy. Many of the views collected during this study align with the findings from other studies that have evaluated the integration and feasibility of pharmacy services (Raisch, 1993; Rosenthal et al., 2010). However, new, and constructive opinions about pharmacist health coaching have also emerged; the *welfare* of patients receiving the service, and the lack of training the Australian pharmacists have about health coaching. These views add a valuable overview for guiding the training of pharmacists to health coach and the integration of the service into community pharmacy practice.

Associations were made between health literacy and patient welfare, whereby a patient's lack of health knowledge was linked to their inability to set safe and attainable health goals. This concern may indicate a lack of understanding about the health coaching process. The underlying concept of pharmacist health coaching is that it is the role of the health coach is to ensure that patients are educated about their health and guided towards setting realistic health goals (Singh et al., 2019; Wolever et al., 2011). That is, it is the role of the pharmacist to improve patient health literacy through patient-centred communication, educational materials, and reinforcement, towards realistic goal setting (Sudore & Schillinger, 2009). Patients that set unrealistic goals and action plans are further educated and guided towards a more suitable one. This process thereby improves patient health literacy and maintains their welfare (Ghorob, 2013; Wolever et al., 2011). As such, there is a need to educate Australian pharmacists about the principles, concepts, and foundation of health coaching; including motivational interviewing and the

psychological theories of behaviour change, to eliminate the misconceptions they have about health coaching.

The lack of time that Australian pharmacists have outside their conventional roles was considered a barrier to the provision of health coaching within the community pharmacy. The current Australian pharmacy business model constrains innovative business and approaches to health care, as community pharmacists are essentially remunerated for selling medicines rather than providing care and advice (Professions Australia, 2015). This has placed the Australian discounting pharmacy banner groups favourably within the profession (Professions Australia, 2015). The interviewees also indicated that offering the pharmacist health coaching service would be dependent on the pharmacy's business model, suggesting that time is not the only barrier to the provision of professional services (Feletto et al., 2010; Puspitasari et al., 2014). This puts forward the notion that some Australian pharmacies would be willing to offer services that benefit their patients (Peterson et al., 2009) at the cost of traditionally remunerated services. Although considered a barrier to the integration of health coaching within community pharmacy during the interviews, the lack of remuneration may not be a barrier to the provision of pharmacist health coaching.

Furthermore, unlike traditional pharmacy services, the collaborative interaction that pharmacist health coaching provides between the patient's health care providers makes it a comprehensive service, with the ability to offer better and sustained improvement in the outcomes and self- management of chronic health (Griffiths & Campbell, 2008; McNeilly, 2003; Vale et al., 2005). Interviewees also considered that pharmacist health coaching could also assist in developing preventative health behaviours. This paves the way for Australian community pharmacists to have an enhanced role in the primary health care sector, which could reduce the burden on the health care infrastructure and save medical clinicians time (Bunting et al., 2015).

The findings from this study revealed that there was an agreement that pharmacist health coaching could have a positive role in Australian community pharmacies. It also showed that pharmacists have an understanding about health coaching and recognise that they have some of the underlying skills required

to provide it. However, it also indicated the need to offer education about pharmacist health coaching as well as training to those wanting to provide the service, to outline the behavioural and psychological concepts on which health coaching is based. The outcomes of the research also proposed that the provision of professional services such as pharmacist health coaching can have a valuable role at the primary health care level and reduce the burden on medical clinicians in Australia.

Furthermore, health coaching could reduce the costs to the Australian health care infrastructure, improving clinic wait times well, and unnecessary costs to public health insurance schemes, such as Medicare (Scott, 2014). Pharmacist health coaching would thus be most practical if it were to target patients with chronic health conditions that have the greatest cost to the Australian health system and increasing burden on individuals (McMillan et al., 2014). These chronic health conditions include hypertension, diabetes, and asthma. Studies have shown that education, regular monitoring, and follow-up of patients with chronic health conditions can result in a considerable improvement in health outcomes as well as the long-term management of the condition (Singh et al., 2019).

The interviews with stakeholders raised several barriers to the integration of health coaching services into Australian community pharmacy practice. A similar discussion arose when the case for pharmacist administered vaccinations was considered in Australia (Bushell et al., 2013; Hattingh, Sim, et al., 2016).. This encompassed patient safety, pharmacist skills, and remuneration (Burt et al., 2018; Hattingh, Sim, et al., 2016). However, the barriers to pharmacist vaccination services in Australia were overcome through a comparative analysis of successful pharmacist vaccination services internationally, pharmacist training and, government support (Bushell et al., 2013; Hattingh, Sim, et al., 2016; Moles & Stehlik, 2015). As such, the service has since been successfully implemented into Australian pharmacy practice (Hattingh, Sim, et al., 2016; Moles & Stehlik, 2015). Similarly, considering that pharmacist health coaching is a valuable service to the Australian healthcare infrastructure, it could be provided by community pharmacies with consideration by government bodies or health insurers willing to remunerate the service and support towards training in the future.

Strengths and Limitations of the Study

This study identified the reasons why pharmacist health coaching is currently not offered within Australian community pharmacies. It also showed that Australian community pharmacists had positive views of health coaching, though identified barriers to its integration into Australian community pharmacy practice. The outcomes of the study also clarified the need for further research into the area of pharmacist health coaching to facilitate remuneration and practice of the service within the Australian community pharmacy.

It needs to be acknowledged that the purposive sampling strategy used for this study may be considered a limitation, as it involves non- random participant selection, which can produce researcher biases and influence interpretation of the results. Likewise, although the use of telephone interviewing was considered convenient, the inability of the researchers to build a rapport with the interviewee and the absence of non- verbal data could have limited the quality of the data obtained and its interpretation. Lastly, the small number of pharmacy leaders (n = 10) who were interviewed was also considered a limitation. However, a saturation of themes; when a new interview yielded no new information occurred after eight stakeholder interviews.

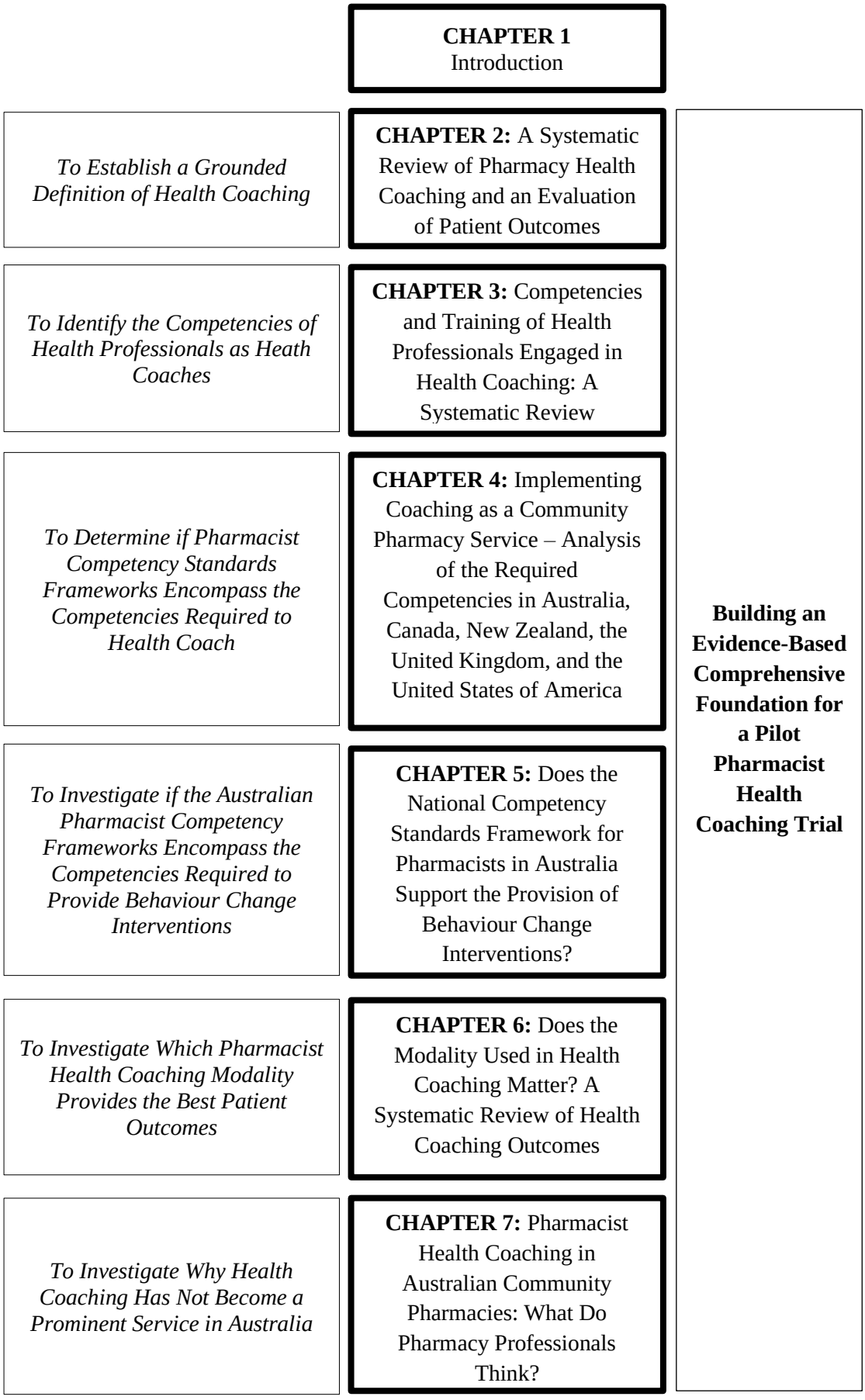
Implications of Research

Pharmacist health coaching services in the United States of America, the United Kingdom, Canada, and the Netherlands have produced positive health outcomes in patients with chronic health conditions. Similarly, it is plausible that the service has the potential to improve patient health outcomes in Australia. Identifying the reasons why pharmacist health coaching is not exclusively offered within the Australian community pharmacy will assist in developing approaches to its integration.

Conclusion

Health coaching could be a valuable professional pharmacy service if offered within community pharmacy in Australia, albeit a few issues have been raised with regards to its integration into Australian community pharmacy. These issues include concerns about patient welfare, the lack of pharmacist

training about health coaching, the time required outside of conventional pharmacist duties to perform health coaching as well as the financial sacrifice made by pharmacists to offer the service over those that are remunerated. Although the positively viewed roles of health coaching in pharmacy outweigh the significance of any perceived issues associated with its integration into the Australian community pharmacy, the lack of remuneration could make it difficult. However, further research into the clinical efficacy of health coaching in Australia could encourage remuneration of the service.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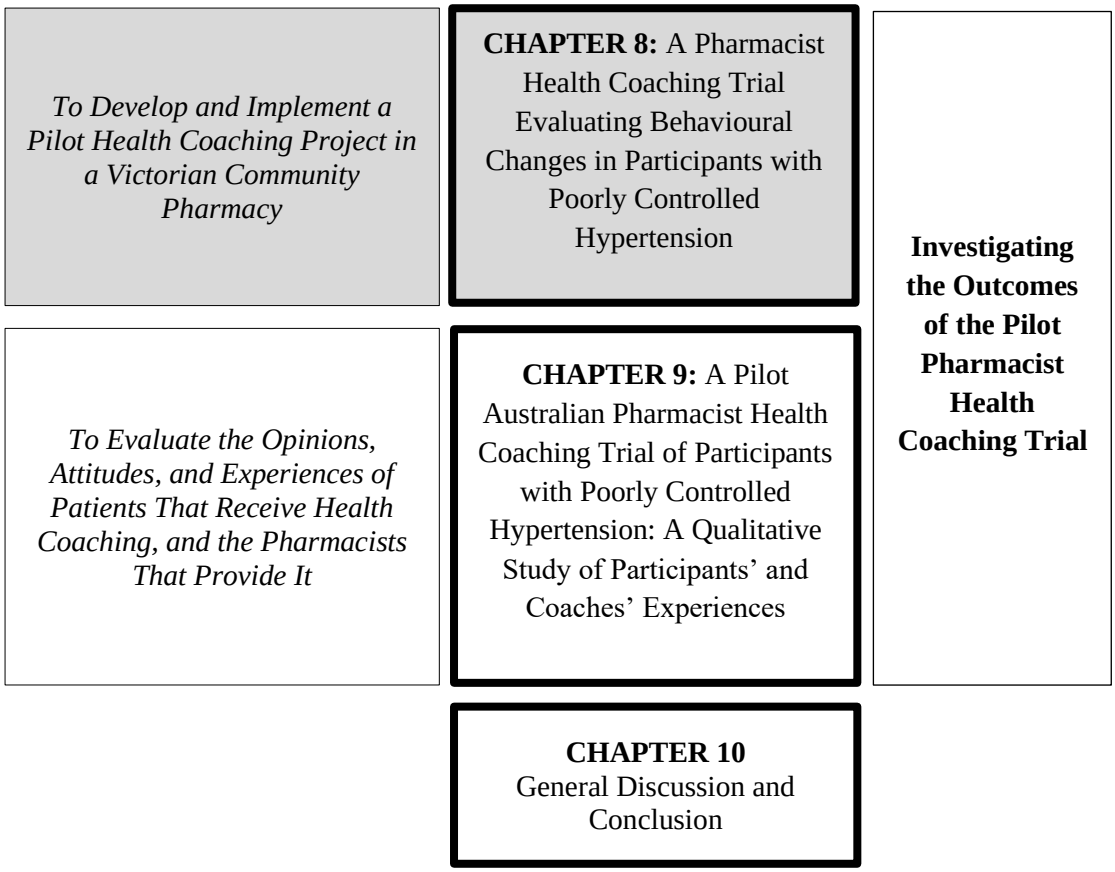
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CHAPTER 8

A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension

This work has been submitted to- Singh, H., Kennedy, G. A., & Stupans, I. (2020). A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension. *BMC Family Practice.* (Submitted 11/06/2020)

Contributions of each author:

Contributor	**Statement of contributions**
Singh, H. K	Conceiving and planning the study design (50%) Conduct study and collate data (100%) Review and analysis of data (60%) Drafting and editing of paper (70%)
Kennedy, G. A	Conceiving and planning the study design (20%) Reviewed and analysed data (20%) Drafting and editing of paper (15%)
Stupans, I	Conceiving and planning the study design (30%) Reviewed and analysed data (20%) Drafting and editing of paper (15%)

Chapter Overview

No readily accessible peer-reviewed literature exists to support the role of Australian pharmacists as health coaches. Furthermore, although existing health coaching studies have produced favourable outcomes in patients with chronic health conditions, they exclusively investigate the effectiveness of the intervention using algorithmic measures while the changes to the correlating health behaviours have not been reported. Hence, there is a need for health coaching studies investigating behaviour change in patients with chronic health conditions.

In this chapter, the outcomes of a pilot Australian pharmacist health coaching study in participants with poorly controlled hypertension are described. The changes to the patient's clinical measures pre- and post-study are compared to the changes to health behaviours pre- and post-study with respect to the SOC approach.

Contribution to Practice

The results from this pilot study recognise the value of patient-centred care and support the provision of health coaching by Australian community pharmacists. The service-improved patients' management of hypertension through the provision of health education, and by facilitating positive changes to causative health behaviours. Pharmacists monitored patients' progress towards behaviour change using the SOC approach and modified consultations accordingly to motivate progress. These positive results demonstrate that pharmacist health coaching and the SOC approach could also be beneficial in patients with other chronic health conditions, facilitating improvements to patient clinical outcomes and health behaviours. However, larger-scale studies are necessary to demonstrate outcomes in other chronic health conditions and determine cost benefits.

Abstract

Background: To investigate whether pharmacist health coaching improves progression through the stages of change (SOC) for three modifiable health behaviours; diet, exercise, and medication management in participants with poorly controlled hypertension.

Methods: In this four-month controlled group study two community-based pharmacists provided three health coaching sessions to 20 participants with poorly controlled hypertension at monthly intervals. Changes in participants' stages of change with respect to the modifiable health behaviours; diet, exercise, and medication management were assessed. To confirm the behaviour change outcomes, SOC were also assessed in a control group over the same period.

Results: Statistically significant changes in the modifiable health behaviours- medication management ($d = 0.19$; $p = 0.03$) and exercise ($d = 0.85$; $p = 0.01$) were apparent in participants who received health coaching and were evident through positive changes in the SOC charts. The participants in the control group did not experience significant changes with respect to the SOC. This was parallel to a decrease in mean systolic blood pressure from session one to session four by 7.53 mmHg ($p < 0.05$, $d = -0.42$) in participants who received health coaching. Improvements to medication adherence was also apparent in these participants, evident from the mean scores for the Adherence to Refills and Medications Scale (ARMS), which decreased significantly from a mean of 15.60 to 13.05 ($p < 0.05$) from session one to four.

Conclusions: Pharmacist health coaching produced promising health outcomes in participants with poorly controlled hypertension. Pharmacists were able to facilitate a positive behaviour change in participants. However, larger participant cohorts are needed to explore these findings further.

Trial registration: Australia New Zealand Clinical Trials Registry ACTRN12618001839291. Date of registration 12/11/2018.

Background

Hypertension is one of the most important preventable risk factors contributing to premature cardiovascular morbidity and mortality in Australia. (Arima et al., 2011; Kjeldsen, 2018; Sharman & Stowasser, 2009) Essential hypertension is defined as having persistent systolic and diastolic blood pressure (BP) of 140 and 90 mmHg or higher, respectively. (Kelly & Rothwell, 2020) Although not curable, hypertension, under the guidance of a qualified health care professional, is a manageable lifelong condition. However, despite this, a considerable number of Australians diagnosed with hypertension have poorly controlled BP. (Sharman & Stowasser, 2009) Lifestyle behaviours, poor medication management, lack of disease knowledge, and insufficient monitoring are contributors to chronic illnesses such as hypertension. (Wang et al., 2013) Consequently, the cost of treating these diseases is increasing dramatically. (Wolever et al., 2010) Interventions that target behaviour change emphasise participant accountability and, consequently, lower costs and are imperative in reducing the burden on primary health care infrastructures. (Byrnes et al., 2012) However, to facilitate these changes, healthy lifestyle programs must address the barriers to chronic disease management as well as a person's readiness to make a lifestyle change. (Levinson et al., 2001)

In Australia, the provision of care in the community is complicated because general practitioners (GPs) are pushed for time and there are low numbers in rural and remote areas. (O'Connor et al., 2011) Furthermore, GPs traditionally work business hours. (O'Connor et al., 2011) Considering community pharmacists are more easily accessed than other primary care providers as they are available after hours (O'Connor et al., 2011) and without the need for appointments, they are in an ideal position to assist participants in the monitoring and management of chronic health conditions by influencing and reinforcing appropriate lifestyle changes. (Sharman & Stowasser, 2009)

Pharmacist health coaching is a promising professional pharmacy service, helping individuals change health behaviours. (Neuner-Jehle et al., 2013; Olsen & Nesbitt, 2010; Palmer et al., 2003) Health coaching is defined as a service that is provided to participants by health care professionals for disease management. It involves a collaborative participant-centred interaction between the participant and

coach for the purpose of behavioural change through the process of goal setting and follow-up. Both the coach and participant are held accountable for the participants' outcomes, though it is the role of the coach to provide expert information and facilitate the motivation of the participant in order to achieve their goal. (Singh et al., 2019)

A series of publications from the United States (US) have shown that pharmacist health coaching has produced favourable outcomes in participants with chronic health conditions such as hypertension. (DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Singh et al., 2019; Wertz et al., 2012) One study reported that although the reduction in systolic BP change was not statistically significant, 90% of participants were satisfied with the service and care that they received from the pharmacists. (DiDonato et al., 2013) In a second US pharmacist health coaching study evaluating the clinical and economic outcomes (Wertz et al., 2012) results showed that in hypertensive participants who received health coaching adherence to medications increased 11% ($p<0.05$) and BP improved significantly from 136.1/83.5 mmHg at baseline to 129.5/79.3 mmHg at follow-up ($p<0.05$). These changes have correlated with a reduction in hypertension-related healthcare costs (Wertz et al., 2012), and also indicate that pharmacist health coaching provides a way to assist participants with health education, medication adherence, prevention, and management of hypertension improving both clinical and non-clinical parameters.

The effectiveness of pharmacist health coaching interventions for participants with chronic health conditions has been assessed using clinical and non-clinical outcome measures, including validated medication adherence questionnaires, clinical targets, and cost-effectiveness. (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012) However, previous studies have not investigated the health behaviours involved in improving these single algorithmic measures. By focusing on several behaviours such as medication, adherence, management, diet, exercise, to assess a participant's improvement in chronic illness, pharmacists will be able to more effectively assess readiness to change, leading to improved and targeted treatment. (Sutton et al., 2003)

The behaviour change process that occurs during health coaching can be described by several types of psychological models and theories. One of the most frequently referred to in the literature is the Transtheoretical Model of Change (TTM). (Shearer et al., 2003) The Transtheoretical Model of Change is also referred to as the stages of change (SOC) approach, as it involves five stages of change: (1) pre-contemplation; (2) contemplation; (3) preparation; (4) action; and (5) maintenance. (Shearer et al., 2003) Although each stage can be defined separately, motivation and readiness to change are important components in the participants' progress through the SOC cycle. (DiClemente et al., 2004) Movement from one stage to the next is not possible without fulfilling the previous stage. (DiClemente et al., 2004) Therefore, the behaviour change process, as part of this theory, is described as a dynamic cyclic process in which at any one time, an individual is in one of the stages, but may move forward to the next stage (progress) or backwards to the previous stage (relapse). (Levinson et al., 2001) Health coaches can utilise this assumption, identifying an individual's position within the SOC to guide them to fulfil specific tasks involved in each stage thus promoting internal readiness and motivation to change. (Shearer et al., 2003)

Several studies involving health care professionals have used techniques such as counselling or coaching to apply the TTM. The approach has been shown to improve the management of behaviours related to alcohol abstinence, medication adherence, and dietary restraint. The TTM produces favourable health outcomes by encouraging participants to move forward through the SOC. (Arafat et al., 2019; Linden et al., 2010) Pharmacists currently use the SOC approach to assist participants with smoking cessation (Hudmon & Berger, 1995; Sinclair et al., 1998), but as far as can be determined from the literature, they have not yet applied the model to other health behaviours.

In this paper, a controlled study coaching intervention was implemented in an Australian community pharmacy. The intervention was evaluated pre- and post- the four-month trial period. The progression through the SOC for three modifiable health behaviours (diet, exercise, and medication management) in addition to the reduction of systolic blood pressure and improvement of medication adherence was evaluated.

Methods

A controlled study design was used. Participants with poorly controlled essential hypertension received pharmacist health coaching once a month for three months, followed by an end of study visit. The primary outcome was a change in participant's SOC for three modifiable health behaviours: diet, exercise, and medication management before and after the health coaching intervention. In addition, the study sought to evaluate participants' systolic blood pressure and medication adherence over the same period. To substantiate the findings of the SOC, participants with poorly controlled hypertension in a control group who did not receive health coaching were also assessed for their SOC with respect to the three modifiable health behaviours.

The study was conducted in Melbourne, Australia, and was prospectively registered for inclusion in the Australia New Zealand Clinical Trials Registry ACTRN12618001839291 on November 12, 2018. The study received approval by the RMIT Human Research Ethics Committee (HREC project number: 21778) on December 21, 2018. Upon completion of the trial, intervention group participants received a $50 gift voucher.

Participants and Recruitment

Pharmacists from five community pharmacies in metropolitan Melbourne were approached to participate in the study. Given that the study involved regular site visits and monitoring, pharmacies that were easily accessible to the researchers were approached for the study. The main barriers to the participation of pharmacists in this research were that they were too busy and, lacked sufficient time and that there was no remuneration for their time.

From January 2019 to July 2019, pharmacists were asked to recruit 20 participants for the controlled trial. Inclusion criteria for participants were: (1) aged over 18 years; (2) diagnosed with essential hypertension (≥ 140/90 mmHg) by their GP; (3) taking at least one antihypertensive; (4) recognised as having poorly controlled essential hypertension by a pharmacist (determined using dispensing history records to assess compliance and participant/pharmacy BP records); and (5) understands the English

language. Participants were excluded from the trial if they were a current smoker or had stopped smoking within the last six months.

A second group of 10 control participants with poorly controlled hypertension were also recruited. These participants did not receive health coaching and it was expected no changes would be apparent in their SOC charts between session one and session four.

Pharmacist training

Pharmacists were trained on how to recognise and recruit eligible participants and how-to health coach participants. The health coach training was provided by a registered pharmacist who was a member of the research team. Sessions were face-to-face and were conducted at a time and place convenient for the pharmacist. The training involved an interactive discussion between the pharmacist and a member of the research team. This included a mixture of didactic information about health coaching, the behaviour change process conceptualised within the transtheoretical model, as well as interactive periods during which pharmacists could ask questions and engage in role-plays. The study protocol and the process of the health coaching sessions was outlined to the pharmacists, this included instruction on how to tailor sessions to participants and how to motivate participants to progress through the SOC. A proforma for each health coaching session, which provided further guidance, was also given to the pharmacists.

Pharmacist health coaching

Pharmacists provided monthly health coaching sessions to intervention group participants for three months. The expected duration of each health coaching session was 15-30 minutes, but this could be affected by factors such as the participant's interest, pharmacist/participant time constraints, and general conversation. Depending on the availability of the participant, the first health coaching session occurred at approximately one-month post-enrolment in the study. Participants were educated about hypertension, associated complications, treatment options, and clinical targets, to improve their knowledge and attitudes about hypertension.

The three health coaching sessions employed the following format:

1. Record current blood pressure and compare it to the previous month.

2. Discuss diet, exercise, and medication adherence goals from the previous month.

2. Participant to set blood pressure goal for the following month.

3. Participant to set goals for diet, exercise, and medication adherence for the following month.

Note that discussions about a previous month were not applicable at the first health coaching session.

Session four took place one month after the completion of all health coaching sessions, at which the assessments from session one were repeated. An additional assessment took place at three months post-study completion and participants were contacted for a telephone interview, with the intent to follow-up on their progress and to investigate whether participants were making use of the skills learned during health coaching sessions at the pharmacy.

Outcome measures

The primary outcome measure was progression through the SOC for three modifiable health behaviours (diet, exercise, and medication management). Developed by the research team, the dynamic SOC charts for each of the modifiable health behaviours influencing the management of hypertension: medication management, diet, and exercise (see Appendix 1) consisted of a 5-item measure that was designed to assign participants to the stage into which they best fitted; the pre-contemplation, contemplation, preparation, action, or maintenance stage. The wording for each of the stages described a participant's verbal cues at each stage and was based on a study that developed a similar scale for self-efficacy and the stages of exercise behaviour change. (Levinson et al., 2001; Marcus et al., 1992) For this study, the wording was adapted for diet and medication management. Unlike previous SOC scales found within the literature, this tool displays the wording for each stage of change within a segment of a wheel, presenting the stages of change as dynamic and allowing for progression and regression. Data analysis was enabled by denoting a number according to a Likert scale: 1=pre-contemplation; 2=contemplation;

3=preparation; 4= action and 5=maintenance. The stages of change charts for each of the modifiable health behaviours were completed at session one and session four by all study participants.

Other measures

The secondary outcome measure was a change in systolic blood pressure (SBP) from session one after three (monthly) health coaching sessions provided by the community pharmacist. Blood pressure was measured using an automated blood pressure monitor (OMRON HEM-7121). Pharmacist health coach training included guidelines on blood pressure assessments. The guidelines stated that the participant should be seated with their feet flat on the floor, legs uncrossed, upper arm bare and with their back and arm supported. Two recordings were taken one minute apart, and the lower of the two recordings was recorded.

To support the outcomes of the dynamic SOC charts, health coaching participants also completed the Adherence to Refills and Medications Scale (ARMS) questionnaire, a validated self-report adherence scale. (Nguyen et al., 2014) The ARMS scale contains twelve questions to assess a participant's medication adherence, which are divided into two categories, adherence with taking medications (eight items) and adherence with refilling prescriptions (four items). Each question is scored on a 4-point scale: 1=none; 2=some; 3=most; 4=all. Possible scores range from 12 to 48, with a lower score indicating greater adherence. The twelve-item scale has high internal consistency overall (Cronbach's alpha=0.80). (Park et al., 2018) The internal consistency of ARMS in this study was calculated to be 0.74.

Data analysis

Descriptive statistics were used to summarise the behaviour change scores for intervention and control group participants. All statistical analyses were performed using the software program IBM SPSS-23 with the significance level set at $p < 0.05$. A test for normality showed that some of the study data were not normally distributed and therefore non-parametric tests were used where required. The Mann-Whitney *U* test was used to compare and validate the behaviour change scores at session one and session

four between the participants that received pharmacist health coaching and the participants who did not. The Wilcoxon Signed-Rank test was used to compare the difference in systolic blood pressure from session one and session four. The effect size (*d*) was calculated for each outcome to quantify the difference between the extent to which health coaching influenced changes to the modifiable health behaviours and systolic blood pressure reduction. An effect size is classified as small ($d = 0.2$), medium ($d = 0.5$) and large ($d > 0.8$). (Kromrey & Foster-Johnson, 1996) Paired-sample *t*-tests were used to assess the outcomes of the ARMS questionnaire, from session one to session four.

Results

Pharmacists

Of the five pharmacies approached for the study, four did not recruit any participants for the study and thus were excluded from the trial. The trial was subsequently conducted at one community pharmacy. Two pharmacists provided verbal and written information about the study to eligible participants and requested that participants read and sign the informed consent document if they wished to take part in the study.

Stages of change

A total of 20 participants met the inclusion criteria and received three pharmacist health coaching sessions at the community pharmacy at monthly intervals. The results of the Wilcoxon Signed-Rank test for within-group comparison are shown in Table 1. Participants who received health coaching experienced statistically significant changes from session one to session four in medication management from a mean of 4.19 to 4.65 ($p = 0.03$, $d = 0.19$) and exercise-related behaviour change from a mean of 3.05 to 4.05 ($p = 0.01$, $d = 0.85$). Participants diet-related health behaviours changed from a mean of 3.95 to 4.55 ($p = 0.08$, $d = 0.63$), which was not statistically significant.

As hypothesised, no statistically significant difference in the SOC between session one and session four was apparent for the participants in the control group (Table 1). The results of the Mann- Whitney *U* test for between-group comparison (Table 1) indicates that there were no differences in the SOC

between control group participants and those that received pharmacist health coaching at session one. In addition, there were no differences in the SOC between groups at session four for medication and, though some changes occurred to participants' diet, where mean SOC scores changed from 4.20 to 4.55 ($p = 0.01$, $d = 0.34$).

Table 8.1. Comparison of behaviour change scores between the control group and health coaching group and a comparison of Adherence to Refills and Medications Scale (ARMS) scores and blood pressure results in the health coaching group.

Behaviour Change		**Session 1**	**Session 4**	***Z***	***p***	***d***
Medication management						
Control group	*M(SD) ±CI*	4.20(1.23) ±0.54	4.20(0.23) ±2.04	0.00	1.00[c]	0.00[c]
Health coaching group	*M(SD) ±CI*	4.19(0.83) ±1.84	4.65(0.49) ±0.21	2.12	0.03[c] 0.68[a] 0.42[b]	0.19[c] -0.10[a] 1.25[b]
Exercise						
Control group	*M(SD) ±CI*	3.30(1.23) ±0.54	3.60(1.07) ±0.47	1.34	0.18[c]	0.26[c]
Health coaching group	*M(SD) ±CI*	3.05(1.40) ±0.61	4.05(0.94) ±0.41	2.63	0.01[c] 0.75[a] 0.50[b]	0.85[c] -1.19[a] 0.45[b]
Diet						
Control group	*M(SD) ±CI*	4.20(1.23) ±0.54	4.20(1.23) ±0.54	0.00	1.00[c]	0.00[c]
Health coaching group	*M(SD) ±CI*	3.95(1.07) ±0.47	4.55(0.82) ±0.36	1.77	0.08[c] 0.48[a] 0.01[b]	0.63[c] -0.22[a] 0.34[b]
Blood Pressure						
Health coaching group	*M(SD) ±CI*	138.53(15.41) ±6.77	131.60(17.10) ±7.49	-2.10	.004	-0.42

ARMS Score						
Health coaching group	*M(SD) ±CI*	15.60(3.38) ±1.50	13.05(1.50) ±0.66	3.64*	0.005	-1.05

[a] *p-value is calculated by Mann- Whitney U test for between-groups comparison at session one.*
[b] *p-value is calculated by Mann- Whitney U test for between-groups comparison at session four.*
[c] *p-value is calculated by Wilcoxon Signed Rank test for within-group comparisons at session one and session four.*
**t value*
Blood pressure

Systolic blood pressure was measured at each health coaching session. Although there was variability between the individual participants' blood pressures at each time point (Figure 1), the Wilcoxon Signed-Rank test showed that an overall reduction in mean systolic blood pressure was apparent at session four. The mean systolic blood pressure improved significantly from 138.53 mmHg at session one to 131.60 mmHg at session four, with an effect size of -0.42 ($p < 0.05$) (Figure 1 and Table 1). Given that the participants had poorly controlled hypertension for some participants blood pressure readings recorded at the enrolment session were higher than at session 1.

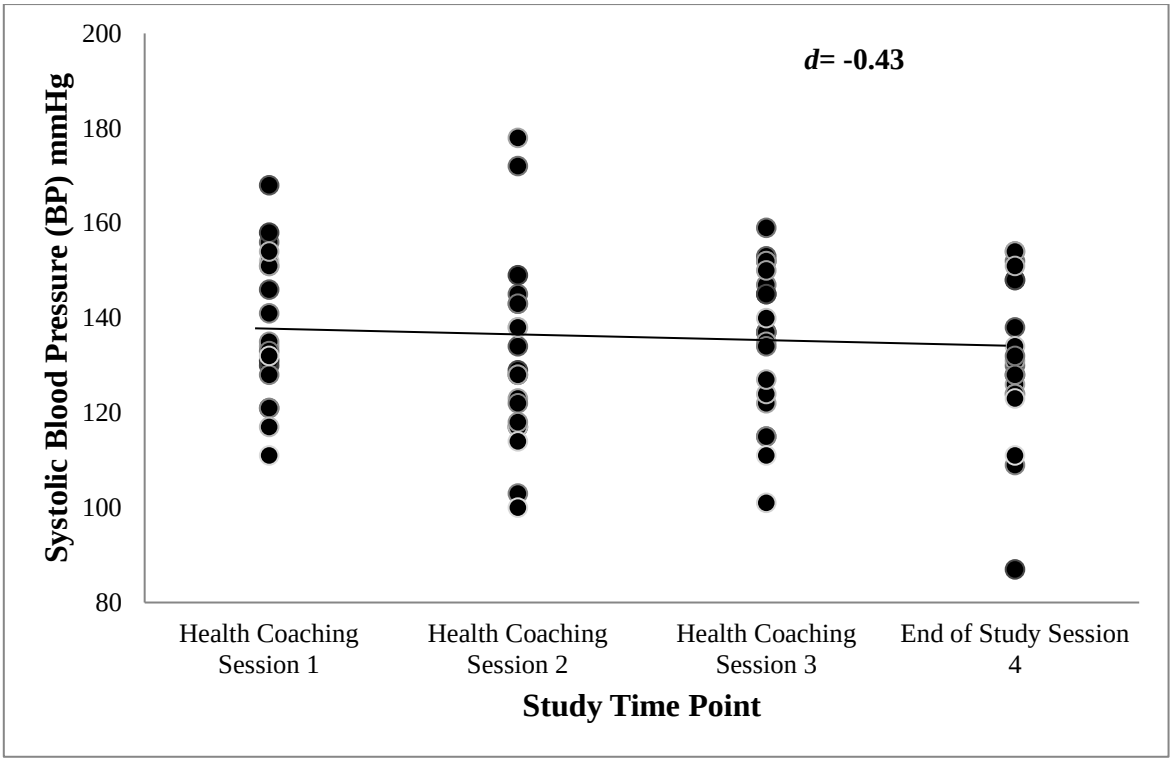

Figure 8.1. Systolic blood pressures for all patients at four-time points in the study showing a line of best fit

Discussion

Previously, the application of the SOC model has involved the use of interviews and questionnaires. Although questionnaires are a convenient way for health professionals to collect information, they can often be cumbersome for participants. (Adams & Cox, 2008) For this reason, existing questionnaires used to assess SOC for diet, exercise, and medication adherence were adapted into dynamic SOC charts. (Lamb & Sissons Joshi, 1996; Levinson et al., 2001; Swan et al., 2007)

Although pharmacist health coaching studies at times have acknowledged the SOC theory, few have investigated its practical use. (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012) The use of the TTM by pharmacists more broadly could encourage behaviour change in participants guiding participants to move forward in the SOC, as has been shown to improve smoking cessation related health behaviours. (Caponnetto et al., 2017) In this study, the combined approach included education about clinical targets, lifestyle changes, and medication adherence specific to the participant's needs

and values. It was tailored to the participants' SOC to encourage progress towards positive behaviour changes for diet, exercise, medication management, and adherence; however, since the movement is dynamic some participants also regressed to earlier stages. (DiClemente et al., 1992) Although the results from the current study appear consistent with prior research, the method introduced in the current study has the advantage of incorporating both dialogue, SOC charts and health coaching thus providing the pharmacist with a comprehensive visual representation of the participant's initial health status and progress at subsequent health coaching sessions. It also enables the pharmacist to tailor their coaching strategies accordingly by providing 'stage-directed counselling'. Stage directed counselling involves harnessing and encouraging the skills and motivation that participants already possess at their current stage to help them to continue to move in a positive direction through the SOC. (Do, 2000) In comparison, a more direct style of counselling such as generic pharmacist counselling does not enable recognition of a participant's SOC. It involves a linear, one-way process lacking participant-centred discussions (Shah & Chewning, 2006), and is unlikely to facilitate progress from pre-contemplation unless the participant is already in the later stages of change.

Potentially, given that, the health coaching group participants were intrinsically motivated to participate in the trial; greater dissatisfaction would have been experienced when changes to the clinical parameters measuring their modifiable health behaviours, medication management, exercise, and diet, were not evident at coaching session two. Consequently, some of these participants cycled back towards an earlier stage of change. This dynamic movement is also apparent in Figure 1, with some health coaching participants experiencing moderate increases in blood pressure at health coaching session two in comparison to session three. However, at the conclusion of the study, it was apparent the intervention group participants experienced an overall positive movement through the SOC. This outcome supports the literature stating that extended participant support through health coaching leads to motivation and prevents a participant from returning to their previous unhealthy routine. For those that suffer from chronic disease, these behaviour changes are imperative to long term disease prognosis. (Lonie et al., 2017)

The results of the Mann Whitney *U* test for between-groups comparison indicated that there were no differences at session one (Table 1). This outcome is favourable for the purpose of control assessments (Arlot & Celisse, 2010) as it demonstrates that participants in both groups were at similar SOC for the three modifiable health behaviours- medication management, exercise, and diet at session one. The results of the Mann Whitney *U* test for between-group differences at session four showed that no changes were evident for the modifiable health behaviours medication management and exercise at, though a significant difference was apparent for the modifiable health behaviour diet ($p = 0.01$, $d = 0.34$). These differences may be attributable to the small number of control participants; larger cohort studies are necessary to confirm these findings.

Despite the variability in the individual participants' systolic blood pressure at the four study time points (Figure 1), a statistically significant change was apparent from session one to session four. It is important to note that all participants reported poorly controlled blood pressure before commencing the coaching trial. The degree of variability is typical for a sample that is ecologically valid in that it captures what pharmacists are usually faced with in terms of patient variability. The results of the current study also support the finding from previous pharmacist health coaching studies where participants with hypertension showed improvements to blood pressure (DiDonato et al., 2013), adherence to antihypertensive medications (Herborg et al., 2008; Wertz et al., 2012), and confidence in self-management of their condition. (Luder et al., 2016)

The change in participants' systolic hypertension coincided with the decrease in ARMS scores from session one to session four, with a lower score indicating greater medication adherence. The proportion of participants who experienced a positive shift within the stages of change for the modifiable health behaviour medication management also correlates with this distribution. The changes to ARMS scores demonstrate that although most participants were initially adherent to their medications at session one, they further improved throughout the health coaching study.

Study Limitations

Unlike previous methods used to assess SOC, dynamic charts have been used in this study to capture the cyclic process of behaviour change. This produces more useful data interpretation of the intervention. However, as with the conventional methods used to assess SOC, the dynamic method also has limitations. It is plausible that participant biases could have skewed some of the behaviour change data, as participants may have been unwilling to report accurately on their SOC for the health behaviours, medication management, exercise, and diet. Biases may also be associated with participants misinterpreting the statements within the behaviour change charts. Furthermore, it must also be recognised that within-group analysis can lead to false-positive results and therefore it may not be appropriate to make comparisons within groups. (Charness et al., 2012)

Given the small sample size of this research, and that the control group was not assessed for changes to clinical outcomes for the study period, other limitations must be acknowledged. It may not be appropriate to generalise the results to the wider population and the sustainability of the changes. Another limitation to the present study is that only a single site agreed to and recruited participants for the study. In addition, there may have been variability in demographic characteristics between the groups, which could have influenced the results of the between-group comparisons. Therefore, the results cannot be generalised to the outcomes that could be experienced by participants from another pharmacy and location. Thus, we suggest that larger control group studies be conducted to support the findings.

Conclusion

This study supports the training of Australian community pharmacists to provide health coaching to improve the management of chronic health conditions such as hypertension. The study also demonstrated that trained pharmacists could apply the stages of change theory to assist a participant's management of chronic health conditions by focusing on modifiable health behaviours. The use of the dynamic stages of change charts may allow pharmacists trained in behaviour change techniques to recognise a participant's readiness to change health behaviours visually. The data obtained from the

charts are associated with changes to systolic blood pressure, and medication adherence, and thus could be an effective tool to guide health interventions.

Practical Implication

This study provides evidence to support the training of Australian community pharmacists to health coach and adopt the TTM. Together, they allow participant-centred stage-directed health coaching to begin promptly, facilitating immediate action, and progress through the SOC. The results bring forward a means of improved participant care and health outcomes in particular for those with chronic health conditions.

List of abbreviations

TTM: Transtheoretical model; BP: Blood pressure; GP: General practitioner; SOC: Stages of change; US: The United States of America.

Declarations

Ethics Approval and Consent to Participate

Ethics approval was obtained prior to study commencement. All participants provided written consent to participate.

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Not Applicable

Availability of Data and Material

The study data and material have been securely stored electronically.

Competing Interests

The authors declare that they have no competing interests.

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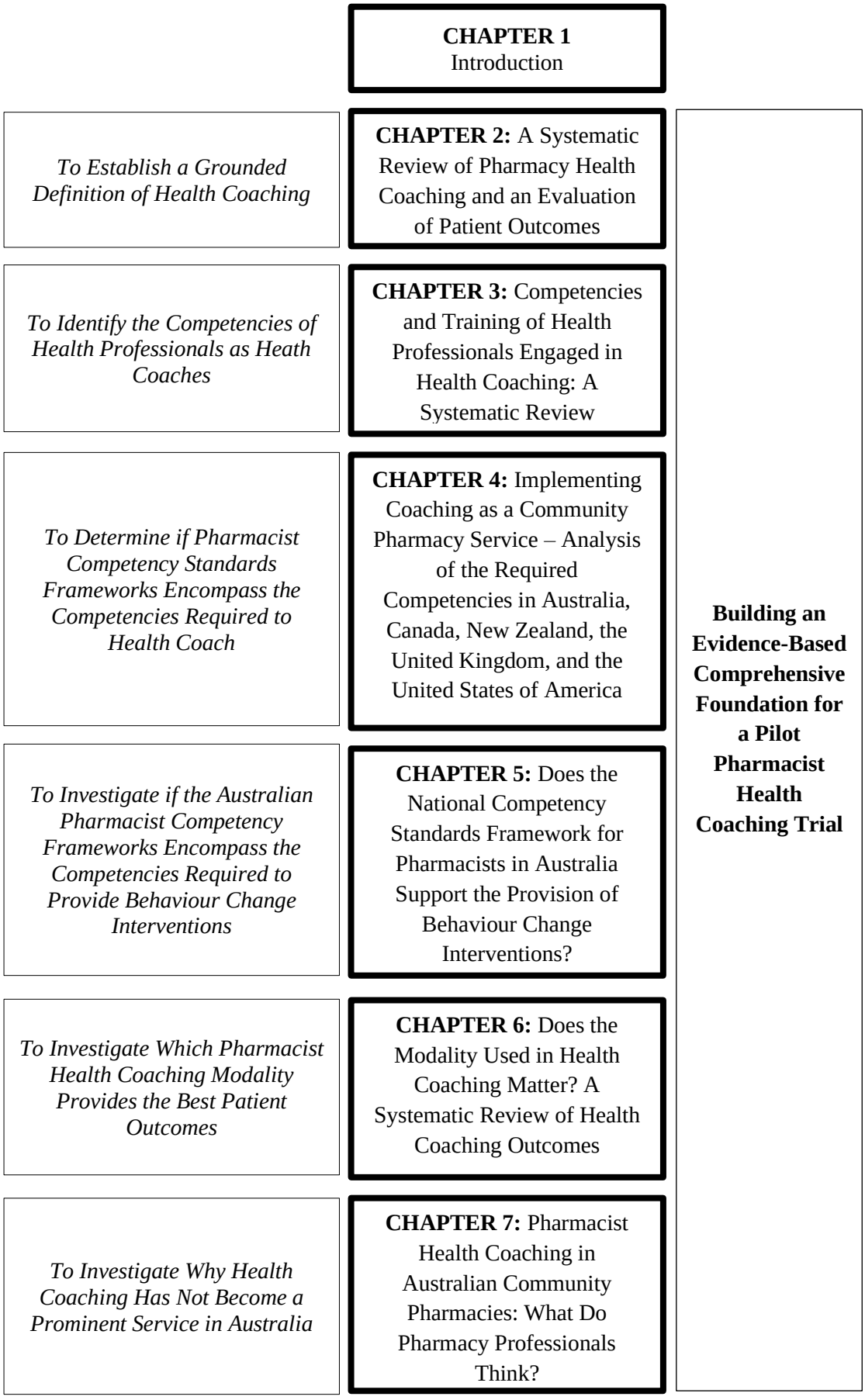
Authors' Contributions

HS conducted the study, collected data, and performed analysis. IS and GK reviewed analysis. All authors contributed to the manuscript preparation.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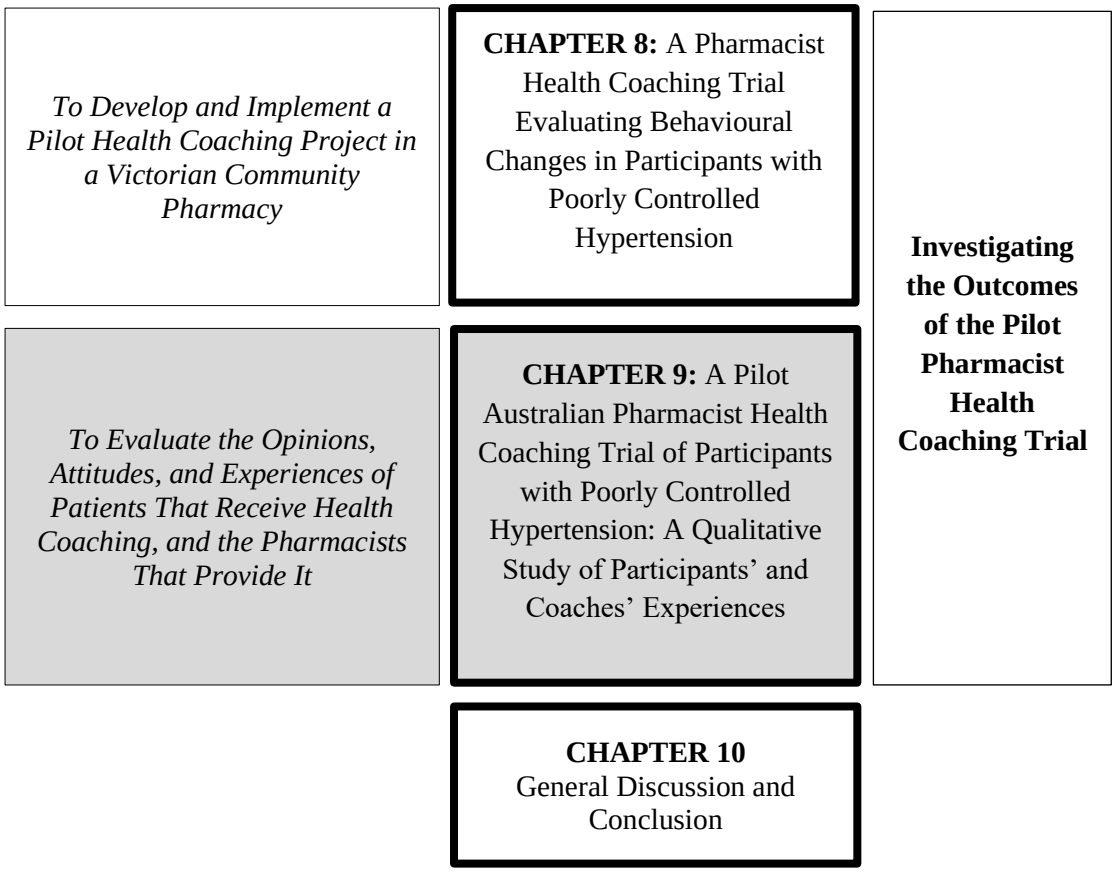
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CHAPTER 9

A Pilot Australian Pharmacist Health Coaching Trial of Participants with Poorly Controlled Hypertension: A Qualitative Study of Participants' and Coaches' Experiences

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Kennedy, G. A	Conceiving and planning the study design (20%) Review and analysis of data (10%) Drafting and editing of paper (15%)
Stupans, I	Conceiving and planning the study design (30%) Review and analysis of data (20%) Drafting and editing of paper (15%)

Chapter overview

Although, several international studies have demonstrated improved participants health outcomes associated with health coaching there have not been any reported studies that have qualitatively evaluated the experiences of participants in pharmacist health coaching programs, necessary to better contextualise a participant's journey and understand changes experienced by participants as a result of health coaching.

In this chapter, the experiences of participants and pharmacists in a pilot health coaching study are qualitatively evaluated.

Contribution to practice

The results of this study builds on the evidence to support the role of Australian pharmacists as health coaches. The study also revealed that some logistical issues to the implementation of health coaching into the community pharmacy. These barriers correlate with those previously identified (chapter 7) and those identified from interviews with a pharmacy owner, though these could be overcome with careful consideration and planning.

Abstract

Objective: An exploratory qualitative study was conducted to explore how stakeholders – participants and coaches experienced, and made sense of, being involved in coaching for people with poorly controlled hypertension.

Methods: Two pharmacists provided monthly health coaching sessions to twenty participants for three-months. Qualitative semi-structured interviews of participants were carried out by pharmacist coaches at baseline, one month, and at three months post-study completion. The pharmacist health coaches were also interviewed. Participant and pharmacist audio-recorded interviews were transcribed verbatim and analysed thematically.

Results: Twenty participants with poorly controlled hypertension received health coaching. Analysis of the transcripts from participant interviews indicated the emergence of three main themes 'beliefs about and management of hypertension', 'reflection on health goals' and 'understanding of and experiences from health coaching' Only one theme emerged from the pharmacist interviews: 'logistics of health coaching in pharmacy'.

Conclusion: Analysis of interviews showed that participants experienced a variety of positive health changes. Changes included a better understanding of health coaching, more realistic beliefs about hypertension, and improved management of hypertension and health goals. Participants were also positive about their experiences of coaching. Interviews with the pharmacists revealed factors such as planning, teamwork, and time management, which related to the implementation and provision of health coaching in community pharmacy practice, which could be overcome through consideration, and planning.

Keywords: Attitudes, opinions, behaviour change, hypertension

Introduction

Hypertension is a chronic health condition leading to significant morbidity and mortality in Australia. (Arima et al., 2011; Kjeldsen, 2018; Sharman & Stowasser, 2009) Lifestyle behaviours, poor medication adherence, lack of disease knowledge, and insufficient monitoring are contributors to chronic illnesses such as hypertension. (Wang et al., 2013) Increased knowledge about these factors can give individuals the confidence to change health behaviours and improve health-related quality of life (HRQoL). (Khalesi et al., 2017) The management of hypertension is also influenced by adherence to anti-hypertensive medication; improvements can reduce the risk of complications and support the long-term positive prognosis of the condition. (Khalesi et al., 2017)

Community pharmacists are well situated to perform health promotion roles to improve patient's management of chronic health conditions such as hypertension. (George et al., 2010) These roles require an awareness of relevant problems, underlying symptoms, and a readiness to raise these with participants. It also requires active communication and counselling skills where the pharmacist is prepared to listen to, and respond constructively to, client's questions and wishes. (Smith, 1992) These attributes are collectively encapsulated within pharmacist health coaching services. (Singh et al., 2019, 2020a)

Pharmacist health coaching is a promising professional pharmacy service, helping participants improve the management of chronic health conditions. (Singh et al., 2019) Health coaching is a client-centred health promotion service provided to the participant by health care professionals for disease management. (Lonie et al., 2017) During health coaching, the stages of change (SOC) approach can be applied using a collaborative interaction between the participant and coach. (Lonie et al., 2017) Accountability for outcomes is shared equally by the participant and health professional, but it is the role of the coach to recognise the participant's SOC and to subsequently, provide expert information to motivate the participant and facilitate progress towards goal attainment, positive knowledge, attitudinal, and behavioural change. (Singh et al., 2019)

Several, United States (US) based pharmacist health coaching studies have been reported in the literature. Some have specifically investigated the outcomes of pharmacist health coaching interventions in participants with hypertension and reported positive outcomes. (DiDonato et al., 2013; Herborg et al., 2008; Luder et al., 2016; Singh et al., 2019; Wertz et al., 2012) The outcomes of the pharmacist health coaching studies (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012) reflect the usefulness of the service in assisting participants manage hypertension via health behaviour and medication adherence education, and regular monitoring and follow-up.

However, most of these studies quantitatively assessed the effectiveness of pharmacist health coaching through clinical and non-clinical outcome measures, including validated medication adherence questionnaires, clinical targets, and cost-effectiveness. These studies did not include qualitative assessments, which are necessary to better understand and contextualise patients' journeys and experiences of change because of health coaching.

The provision of health coaching services by pharmacists requires consumer satisfaction and support to be assessed, because they are integral to the initiation and utilisation of primary care services. This also provides an opportunity for service improvement and consumer education about the benefits of the service. (Wirth et al., 2010) Furthermore, pivotal to service expansion within the community pharmacy are the attitudes and opinions of the pharmacists delivering the service because they can be both drivers and barriers to successful implementation. Previous pharmacist health coaching studies have not investigated the stakeholder's experiences of community pharmacist health coaching interventions. Thus, this study aimed to explore how participants and pharmacist coaches experienced a coaching intervention for poorly controlled hypertension.

Material and methods

Study Design

We designed an exploratory qualitative semi-structured interviews study that examined how pharmacist health coaching changes behaviour, knowledge, opinions, attitudes, and experiences of participants with poorly controlled essential hypertension.

The study also investigated the pharmacist health coaches' perceptions of, and barriers/enablers to, pharmacist health coaching.

Ethics

The study conducted in Melbourne, Australia, was registered for inclusion in the Australia New Zealand Clinical Trials Registry (ANZCTR) on November 12, 2018 and received approval by the RMIT Human Research Ethics Committee (HREC project number: 21778) on December 21, 2018. All procedures performed in this study were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Participants and Recruitment

Pharmacists from five community pharmacies in metropolitan Melbourne were approached to participate in the study. As the study involved regular visits to the pharmacy, pharmacies easily accessible to the researchers were approached.

From January 2019-June 2019, the pharmacists were asked to recruit participants they recognised as having poorly controlled hypertension for the pilot trial. Participants were included in the pilot trial if they met the following criteria: (1) aged over 18 years; (2) diagnosed with essential hypertension (≥ 140/90 mmHg) by a physician; (3) taking at least one antihypertensive; (4) recognised as having poorly controlled essential hypertension by the pharmacist (determined using dispensing history records to assess compliance and participant/pharmacy BP records); and (5) understands the English language.

Participants were excluded from the trial if they were a current smoker or had stopped smoking within the last six months.

Pharmacist Training

Pharmacists were trained how to recognise and recruit eligible participants, how-to health coach participants using the SOC approach, and how to conduct the qualitative semi-structured interviews. The health coach training was conducted face-to-face at a time and place convenient for the pharmacist. Pharmacists were provided with a proforma, which provided further guidance for each health coaching session.

The Intervention

Participants received health coaching sessions from a community pharmacist once a month for three months. During these sessions, pharmacist health coaches provided the participants with education about hypertension, associated complications, treatment options, and clinical targets, to improve their knowledge and attitude about hypertension. During this time, participants set goals specific to modifiable health behaviours diet, exercise, and medication management with the intent to improve management of hypertension. These goals were reviewed at subsequent health coaching sessions.

The pharmacist health coaches conducted qualitative semi-structured interviews with participants at baseline, at one month, and three- months -post-study completion. These interviews facilitated in-depth exploration of participants' experiences about health coaching.

Except for the three-month post-study completion telephone interview, all pharmacist health coaching sessions, and interviews involved face-to-face contact. Pharmacist health coaches were also interviewed after the first health coaching session and after the completion of the study by one of the researchers. All interviews of participants and pharmacists in the study were audio-recorded for subsequent qualitative analysis.

The flexible interview schedule was developed to support the aims of the study, which included a brief structured list of questions to prompt the pharmacist health coaches and the researchers to discuss key

issues (Appendix). This identified broad areas to be covered together with examples of suggested probes, although the interviewer was also free to follow up on other issues that might arise and to probe and clarify responses. This approach led to discussions in which participants and pharmacists were able to identify and explain issues of importance to them rather than being limited by the narrower requirements of a structured questionnaire. Participants and pharmacists were given a full explanation about the study before the interviews and further written information was provided. Confidentiality and anonymity was assured and signed consent was obtained.

Data Analysis

The digitally recorded interviews with participants and pharmacists were transcribed verbatim and de-identified by one team member. The data was thematically analysed by one researcher (Maguire & Delahunt, 2017) Two other researchers then participated in cross-checking and came to a consensus on areas of disagreement. Transcripts were read repeatedly, and salient terms and quotes were extracted. These were organised and consolidated to form categories. The categories were derived inductively; that is, from the data. The categories were then organised into main themes containing subcategories. After initial categorisation, some subcategories were reorganised, renamed, and combined. The results are illustrated by quotes from the interview.

Each of the twenty participants was assigned a number to maintain their anonymity (given after each quotation). Saturation of themes occurred in participant interviews and no new themes emerged from the data. Given that only two pharmacists carried out the coaching theme saturation was not clearly defined in the transcripts from the pharmacist interviews. The analysis revealed that the pharmacists responded to the probe questions in a similar way.

Results

Two pharmacists consented to participate in the study and to the publication of anonymised responses. These pharmacists were female and had three and five years of pharmacy experience, respectively. Due

to the following barriers: too busy, lacked sufficient time, and because there was no remuneration, only two pharmacists from a single pharmacy agreed to participate in the trial.

Thirty participants were approached for the trial and screened, but only twenty-one participants met the inclusion criteria and consented to participate. Only one participant was lost to follow-up and did not complete the study. Overall, 60% of the participant were females and the average age was 64±13.7 years. Participants were taking one or more (1.4±0.7) antihypertensive medications at enrolment. The demographic characteristics of all the study participants are described in Table 1.

The duration of the interviews with participants and pharmacists averaged 8.5 minutes (range 2-34 min). After analysis of the participant interview transcripts from the beginning and the end of the study, the main themes that emerged were the 'beliefs about and management of hypertension', 'reflection on health goals' and 'understanding of and experiences from health coaching'. While the analysis of the transcripts from pharmacist interviews showed the emergence of one theme 'logistics of health coaching in pharmacy'. Themes are presented in Table 2. Subcategories are italicised in the following text.

Table 9.1. The Demographic Characteristics of the Participants and Pharmacists

Interviewee	**Characteristic**	**Number**
Participant	Male	8
	Female	12
	Age	64±13.7
	Number of anti-hypertensive medications	1.4±0.7
Pharmacist	Female	2
	Years of practice	3; 5

Table 9.2. Themes and Categories from Interviews

Main theme	Time at which quote recorded and subcategory (bold)	Participant quotes
Beliefs about and management of hypertension		
	Study commencement	
	Erroneous causes	"You get excited or angry or something." [11] "High blood pressure can regulate your mood as well." [12] "Stress can put it up?" [17]
	Clinical target uncertainty	"The doctor mentioned what it should be." [6] "130/95 would be acceptable." [12] "He (the GP (physician)) didn't say." [20]
	Medications	"Take tablets, maybe have a rest". [03] "Just through tablets. I try to remember to take it every day". [04] "Taking medications regularly". [17]
	Simple goals	"Maybe try to eat less chocolate and drink Coca-Cola, but it's winter". [11] "The only thing that I do have that feel like I shouldn't do it eat is potato chips". [18] "I want to focus on my diet first and organise light and easy packages. With exercise I get tired and

		my back hurts because I carry a lot of extra weight". [19]
	Brief reflections	"Makes me feel that I've got to go further". [01] "I don't know. I wasn't far off last time. Just right. Maybe deep down I'm worried". [05] "Makes me feel nice, better". [08]
	Study conclusion	
	Recognised causes	"Hypertension is because it comes from being overweight or high diet because your parents have it". [15] "The stress in your blood vessels…. a bit like heart disease where you get a build-up in your arteries". [09] "It's long term, food habits and genetically also". [08]
	Definitive targets	"At my age, I'd say 140 and below and the other one would be about 80-90". [02] "Normal blood pressure is 130/80". [04] "About 135-120 around that way". [10]

	Multifactorial approach	"Taking my tablets on time and exercising actually and my food has less salt". [03] "Same, I'm taking blood pressure tablets every day and I've been to regular checks with the doctor and he says it's good. No changes to my medications, still the same". [06] "I have been doing regular exercises and in the morning walk and stuff and being physically active around the house as well as diet control". [12]
Reflection on health goals		
	Study commencement	
	Simple goals.	"Maybe try to eat less chocolate and drink Coca-Cola, but it's winter". [11] "The only thing that I do have that feel like I shouldn't do it eat is potato chips". [18] "I want to focus on my diet first and organise light and easy packages. With exercise I get tired and my back hurts because I carry a lot of extra weight". [19]
	Brief reflections	'Makes me feel that I've got to go further". [01] "I don't know. I wasn't far off last time. Just right. Maybe deep down I'm worried". [05] "Makes me feel nice, better". [08]
	Study conclusion	
	Sophisticated goals	"Keep my blood pressure the same but cut down on chocolate a little bit. Still keeping up my steps and medication". [11]

		"Cut out coffee and don't take too much salt and continue with my gardening and chair exercises". [18] "I can set my goals higher with the weight loss …So I think I can set my goals higher … Walk more often and get a prescription for cholesterol medicine and take it every day with my blood pressure medicine". [19]
	Integrative reflections	"I feel okay, but I'm trying to lose a bit of weight that would help me to reduce my blood pressure. I'm trying, but of course, sometimes you just can't do that. I'm avoiding fatty foods, but to be honest with you with exercise, I'm not doing what I should be doing. But as the weather starts warming up, I will start again... Without fail, I'll take my medications" [02] "I just trying not to be weak and eat the wrong foods. Time was the only challenge I want to get to work quickly, but I also want to do the exercise. And when I'm coming home, I want to rush because there's something I want to come home for". [04] "The biggest challenge was increasing exercising and modifying the diet. I've given up a few things like habits and sugars and things and reduced them right down. I've joined the gym. And the tablets

		have worked as well; there has a big improvement in my blood pressure." [06]
Understanding of and experiences from health coaching		
	Study commencement	
	Health expert	"From the name, you'll talk about improving your health." [07] "I don't know much about it. But getting advice from experts, how to look after yourself in relation to the blood pressure and medication management." [08] "People with expertise and training, giving information to people." [10]
	Study conclusion	
	Accountability	"It has helped keep me aware of my blood pressure. And it prompted me to make changes. I faced some challenges." [19] 'This has been good; it keeps me focused they have been informative and keep you focused. I appreciate the time." [06] "It kept me accountable because I know I'm seeing you the next month and you're going to check and you're going to see if I haven't done anything." [09]
	Positive feelings	"I think it's very good that the pharmacy does that, especially for older people like me". [02]

		"I think it would be helpful because before doctors just usually don't have enough time to just sit down and talk. They just say, okay you've got high blood pressure I'm going to put you on some pills and send you on your way".[04] "Yes, most definitely, if someone has questions, or even to check yourselves, are you following your routine or not. If you have questions you can ask, yeah I recommended it". [05] "Yes, definitely. Because sometimes you don't have a doctor and the pharmacist is there to help if you don't need to go to the doctor to check your blood pressure". [11]
Logistics of health coaching in pharmacy		
	Study commencement	
	Planning	"I found it (the paperwork) very useful. I don't think anything needs to be added in my opinion, nothing else. Everything is in the papers already". [01] "I thought it was a little bit challenging for loss of better words because it was my first one, so I didn't know what to do at what time. I had a proforma to help guide me in the session". [02]
	Time management	"At a pharmacy where they don't have multiple pharmacists, it could take out time from your daily

		activities. And that could be problematic, especially if it's a busy pharmacy and a busy time of day". [01] "When I first started (health coaching), I was trying to fit the session after my work hours or during my lunch break." [02]
	Study conclusion	
	Teamwork	"We often have multiple pharmacists on it any one time, and we do have a designated health hub where a pharmacist is rostered on to work at certain times during the day… So, it doesn't really take out of your daily activities because that is your job for basically that amount of time during the day or for the day". [01] "If I was the only pharmacist that was dispensing of course it would be difficult. When there were more pharmacists ...I would tell the patient to wait 5-10 minutes to clear the mess and after that do the blood pressure session." [02]
	Planning	"It worked well. The documents helped". [01] "I tried to stick to the proforma a lot more strictly I know that I need to ask those specific questions to get all my data" [02]
	Strengthened health outcomes	"I think they all experienced positive feedback, reducing the blood pressure because they knew

		how important it is to take the medicines. Previously before the blood pressure sessions, they were thinking if I run out a couple of days without my medicines it's not a big deal, but after explaining to them how to it's important to take the medicine regularly and not to miss a dose. I think they all had an improvement in blood pressure. Also, I have advised them for the lifestyle, diet, and exercising and because of that a little bit dropped their blood pressure, almost every one of my participants improved." [01] "It was positive. Participants who started with quite a high blood pressure and mostly managed to sort of reduce that. And they were happy at the end with themselves as well as with the health coaching sessions that we had run. They were really happy with me, and when they were asked if they'd be willing to take part in another health coaching study, all of the participants said that they would be willing to do that as well." [02]

Beliefs about and management of hypertension

Study commencement

Some participants listed *erroneous causes* for hypertension at the beginning of the study, which showed uncertainty in knowledge and understanding about this chronic health condition. The causes listed were related to stress, mood, and wellbeing.

> "You getting excited or angry or something." [11]

"High blood pressure can regulate your mood as well." [12]

"Stress can put it up?" [17]

When asked about what their blood pressure should be most participants expressed *clinical target uncertainty.* Participants referred to their general practitioners (GPs) during this time and mentioned having / not having been informed about this.

"The doctor mentioned what it should be." [6]

"130/95 would be acceptable." [12]

"He (the GP (physician)) didn't say." [20]

When questioned about how they managed their hypertension most participants showed a basic understanding as they referred predominately to using *medications* at the beginning of the study. Participants also discussed the commitment to take antihypertensive medications regularly.

"Take tablets, maybe have a rest". [03]

"Just through tablets. I try to remember to take it every day". [04]

"Taking medications regularly". [17]

Study conclusion

The post-study interviews revealed that participants' beliefs about the causes of hypertension had changed because of pharmacist health coaching. Participants were able to discuss the *recognised causes* of hypertension, which included being overweight, diet, lifestyle, and family history. Some were technical in their responses and described the clinical effects of hypertension within the body.

"Hypertension comes from being overweight or high diet because your parents have it". [15]

"The stress in your blood vessels…. a bit like heart disease where you get a build-up in your arteries". [09]

> "It's long term, food habits and genetically also". [08]

At the completion of the study, pharmacist health coaching had also changed the participants' awareness of clinical goals as they described *definitive targets* for hypertension.

> "At my age, I'd say 140 and below and the other one would be about 80-90". [02]

> "Normal blood pressure is 130/80". [04]

> "About 135-120 around that way". [10]

Through continued education and guidance during the health coaching session's participants showed broader knowledge about hypertension and its management. Follow-up interviews indicated this as participants reported that the management of hypertension required a *multifactorial approach.* This included exercise, diet, regular blood pressure monitoring, and visits to the GP.

> "Taking my tablets on time and exercising actually and my food has less salt". [03]

> "Same, I'm taking blood pressure tablets every day and I've been to regular checks with the doctor and he says it's good. No changes to my medications, still the same". [06]

> "I have been doing regular exercises and in the morning walk and stuff and being physically active around the house as well as diet control". [12]

Reflection on health goals

Study commencement

When encouraged to nominate personal health goals specific to the modifiable health behaviours diet, exercise, and medication management to improve the management of their hypertension at the beginning of the health coaching study, participants articulated *simple goals.* These goals included making changes to predominantly one modifiable health behaviour. For many participants, this was related to their diet.

> "Maybe try to eat less chocolate and drink Coca-Cola, but it's winter". [11]

> "The only thing that I do have that feel like I shouldn't do it eat is potato chips". [18]
>
> "I want to focus on my diet first and organise light and easy packages. With exercise I get tired and my back hurts because I carry a lot of extra weight". [19]

Upon follow-up at one month, the participant's described *brief reflections* of their initial health goals, predominantly referring to their feelings and experiences.

> 'Makes me feel that I've got to go further". [01]
>
> "I don't know. I wasn't far off last time. Just right. Maybe deep down I'm worried". [05]
>
> "Makes me feel nice, better". [08]

Study conclusion

As the study progressed participant's health goals became more *sophisticated goals.* They referred to making changes concurrently to the modifiable health behaviours including diet, exercise, and medication management.

> "Keep my blood pressure the same but cut down on chocolate a little bit. Still keeping up my steps and medication". [11]
>
> "Cut out coffee and don't take too much salt and continue with my gardening and chair exercises". [18]
>
> "I can set my goals higher with the weight loss …So I think I can set my goals higher … Walk more often and get a prescription for cholesterol medicine and take it every day with my blood pressure medicine". [19]

Upon reflection about of their goals after the study, participant described *integrative reflections.* These acknowledgments included details about their feeling towards their goals, their accomplishments, and downfalls, as well as actions for the future.

> "I feel okay, but I'm trying to lose a bit of weight that would help me to reduce my blood pressure. I'm trying, but of course, sometimes you just can't do that. I'm avoiding fatty foods, but to be honest with you with exercise, I'm not doing what I should be doing. But as the weather starts warming up, I will start again... Without fail, I'll take my medications" [02]

> "I just trying not to be weak and eat the wrong foods. Time was the only challenge I want to get to work quickly, but I also want to do the exercise. And when I'm coming home, I want to rush because there's something I want to come home for". [04]

> "The biggest challenge was increasing exercising and modifying the diet. I've given up a few things like habits and sugars and things and reduced them right down. I've joined the gym. And the tablets have worked as well; there has been a big improvement in my blood pressure." [06]

Understanding of and experiences from health coaching

Study commencement

Most participants showed a basic understanding of health coaching at the beginning of the study. They acknowledged that health coaches were extensively trained and were *health experts*. Participants recognised the value of pharmacist health coaching and that it was the coach's obligation to provide expert advice to them on how to improve their blood pressure and medication management, with the intent to improve their health.

> "From the name, you'll talk about improving your health." [07]

> "I don't know much about it. But getting advice from experts, how to look after yourself in relation to the blood pressure and medication management." [08]

> "People with expertise and training, giving information to people." [10]

Study conclusion

Participants understanding of health coaching and the process involved was seen to have progressed at the completion of the study. Patient awareness of and the importance of monitoring hypertension was enhanced, as they described the process of health coaching as collaborative and having stimulated *accountability* to make changes for their health.

> "It has helped keep me aware of my blood pressure. And it prompted me to make changes. I faced some challenges." [19]

> 'This has been good; it keeps me focused they have been informative, and it keeps you focused. I appreciate the time." [06]

> "It kept me accountable because I know I'm seeing you the next month and you're going to check and you're going to see if I haven't done anything." [09]

At three months post-study completion, participants were asked about their experiences of the health coaching sessions, if they had learned anything new, and about the provision of the service by other pharmacists in the future. All the participants shared and described *positive feelings* about the service.

> "I think it's very good that the pharmacy does that, especially for older people like me". [02]

> "I think it would be helpful because before doctors usually don't have enough time to just sit down and talk. They just say, okay you've got high blood pressure I'm going to put you on some pills and send you on your way".[04]

> "Yes, most definitely, if someone has questions, or even to check yourselves, are you following your routine or not. If you have questions, you can ask. I recommend it". [05]

> "Yes, definitely. Because sometimes you don't have a doctor and the pharmacist is there to help if you don't need to go to the doctor to check your blood pressure". [11]

Logistics of health coaching in pharmacy

Study commencement

When asked about their initial health coaching session, pharmacists stated that considerable *planning* was required to ensure that they conducted the sessions properly and discussed all the relevant information. They referred to the proformas that were provided, which gave some guidance during the health coaching process.

> "I found it (the paperwork) very useful. I don't think anything needs to be added in my opinion. Everything is in the papers already". [01]

> "I thought, it was a little bit challenging for loss of better words because it was my first one, so I didn't know what to do at what time. I had a proforma to help guide me in the session". [02]

During this time, the pharmacists also stated that *time management* played a key role in scheduling health coaching appointments whilst also allowing them to keep up with their conventional duties in the pharmacy. They also acknowledged that for a pharmacy with limited staffing the provision of services such as health coaching might not be feasible.

> "At a pharmacy where they don't have multiple pharmacists, it could take out time from your daily activities. And that could be problematic, especially if it's a busy pharmacy and a busy time of day". [01]

> "When I first started (health coaching), I was trying to fit the session after my work hours or during my lunch break." [02]

Study conclusion

Interviews with pharmacists at the completion of the study showed that the pharmacists acknowledged and appreciated the *teamwork* at their pharmacy, which at times allowed them to work health coaching sessions around their conventional duties. The pharmacists also indicated that adequate staff rostering also made one-on-one health coaching sessions with participants possible.

> "We often have multiple pharmacists on it any one time, and we do have a designated health hub where a pharmacist is rostered on to work at certain times during the day… So, it doesn't

> really take out of your daily activities because that is your job for basically that amount of time during the day or for the day". [01]
>
> "If I was the only pharmacist that was dispensing of course it would be difficult. When there were more pharmacists ...I would tell the participant to wait 5-10 minutes to clear the mess and after that do the blood pressure session." [02]

Similarly, to interviews at the beginning of the study, during post-study interviews pharmacists reported that *planning* the health coaching sessions adequately made it convenient for them to administer. This also involved adhering to the proforma, which allowed them to collect all the appropriate information for that session.

> "It worked well. The documents helped". [01]
>
> "I tried to stick to the proforma a lot more strictly I know that I need to ask those specific questions to get all my data" [02]

At the completion of the study, interviews with the pharmacists revealed that they had positive views on the impact that health coaching had on the participants. They reported that participants had experienced *strengthened health outcomes*. These outcomes included reaching lifestyle goals, clinical targets, as well as satisfaction towards the health coaching service.

> "I think they all experienced positive feedback, reducing their blood pressure because they knew how important it is to take the medicines. Previously before the blood pressure sessions, they were thinking a couple of days without my medicines is not a big deal, but after explaining to them the importance of taking the medicine regularly and not to miss a dose, I think they all had an improvement in blood pressure. Also, I have advised them about lifestyle, diet, and exercising, and because of that their blood pressure dropped, almost every one of my participants improved." [01]
>
> "It was positive. Participants who started with quite a high blood pressure mostly managed to reduce that. And they were happy at the end with themselves as well as with the health coaching

> sessions that we had run. They were really happy with me, and when they were asked if they'd be willing to take part in another health coaching study, all of the participants said that they would be willing to do that as well." [02]

Discussion

This study provides an extensive and consistent perspective of the stakeholders involved in pharmacist health coaching interventions, which has not previously been reported in the literature. It presents the participant's, and pharmacist's sentiments, attitudes, and experiences about health coaching before, during and after a pilot health coaching study. It also introduces the logistical pros and cons that may need to be addressed if health coaching is to be established as a professional pharmacy service in Australia. Many of the views collected during this study align with the findings from a study that previously evaluated the integration and feasibility of health coaching in the Australian community pharmacy. (Singh et al., 2020b)

Beliefs about and management of hypertension

The results also iterate the strong connection between participant engagement and desirable participant outcomes. (Wasson & Coleman, 2014) Pharmacist health coaching strengthened participant interest and health confidence; this was reflected by changes to beliefs about hypertension. Participants were initially *uncertain* about the causes of and the clinical targets for hypertension. This lack of understanding and health confidence can inevitably lead to potentially avoidable complications and hospital admissions. (Wasson & Coleman, 2014) This correlated with participant's minimalistic explanations about their management of hypertension, involving mainly the use of *medications*. Medication non-adherence is one of the most common preventable causes of cardiovascular events in individuals with hypertension. (Pladevall et al., 2010) However, interventions involving both pharmacological and non-pharmacological approaches are imperative to achieving maximum therapeutic benefits to disease management. (DeSimone & Crowe, 2009) The concluding outcomes of pharmacist health coaching support these findings, whereby, participant's health goals changed after regular health coaching sessions. Participants subsequently described the management of their

hypertension to involve a *multifactorial approach*, which included making changes to their exercise, diet, regular blood pressure monitoring, and having regular visits with their GP. This is an encouraging result given that the management of chronic health conditions is complex and requires comprehensive management plans to foster a greater focus on self-management of hypertension. (Lawn & Schoo, 2010) It also indicates that pharmacist health coaching improved participant's health knowledge and progress through the SOC. These results are consistent with a physical activity hospital-based health promotion service study provided to participants with type 2 diabetes. In this study, exercise specialists individualised physical activity counselling based on the SOC model, and follow-up occurred at baseline and three-months. The results showed that a statistically significant difference was found in the participants' stage of change, 59% ($p< 0.001$) of participants made a positive change to their physical activity status. (Taket et al., 2006) Although similar outcomes were apparent from both studies, the present study indicates that pharmacists are equally qualified to provide health promotion services and from an easily accessible location. This was reflected by confident responses at the completion of the study describing *recognised causes* and *definitive targets* for hypertension. These results are also likely to coincide with improvements in clinical outcomes, given that participant knowledge and awareness of hypertension are important factors in monitoring and achieving blood pressure control. (Alexander et al., 2003; Lam & Guirguis, 2010) The outcomes of previous research investigating participant health confidence also support these findings. In one study, participant health confidence was associated with participant satisfaction and positively reported self-related health status. (Zhang et al., 2007) In another study, it was found that engaging participants in the self-management of their blood pressure enhanced their confidence in health management and improved their HRQoL. (Johnson et al., 2016)

In recognising the relationship between health confidence, self-rated health status, and participant satisfaction, health professionals can better meet their participant's needs. (Zhang et al., 2007) Furthermore, given that participant satisfaction is used as an indicator of the quality of health services (Zhang et al., 2007), it is reasonable to suggest that participants were satisfied with the health coaching services provided to them and that their expectations for the service were met. This is a promising

finding as it provides the groundwork for the expansion of pharmacist health coaching services in Australia.

Reflection on health goals

The process of health coaching requires participants to establish personal goals at commencement, thereby motivating health improvement. (Singh et al., 2019) Despite being prompted to consider goals specific to each modifiable health behaviour: diet, exercise, and medication management during the health coaching sessions participants initially composed *simple goals* referring to modifying a single health behaviour. However, through education, advice, collaborative discussion, and goal setting during regular health coaching sessions, periodic follow-up of the participants indicated that their reflections changed from being *brief reflections* at the beginning of the study to *integrative reflections* at the completion of the study. This suggests that pharmacist health coaching raised participant's awareness about their health enabling them to recognise the challenges they faced towards health improvement. It also facilitated them to build on former health goals, empowering them to subsequently set *sophisticated goals* as the study progressed. This showed that participants improved their health literacy allowing them to reflect on their situation and associate their actions (or inaction) with their health. (Liddy et al., 2015). This mirrors findings from similar programs involving integrated models of patient care engaging a health coach in conjunction and complementary to a health professional. (Hinman et al., 2016; Liddy et al., 2015) However, the present study indicates that pharmacists can merge professional roles being a health professional and health coach simultaneously while also producing favourable patient outcomes.

Understanding of and experiences from health coaching

Interviews with the participants at the beginning of the study revealed that although they had a basic understanding of health coaching, they had misconceptions about the process involved. Participants initially described health coaching as a pharmacist-led process during which they failed to describe their own participation. However, at the completion of the pilot trial patient's thoughts had changed and they described themselves as being more *accountable* for their health and considered the process of health

coaching as collaborative. Studies have shown that participant accountability and involvement in health care decision making empowers them to improve health outcomes through the services that they receive. (Vahdat et al., 2014) The changes in participant thoughts reflect favourable remodelling of attitudes and behaviours towards health management and services as an outcome of pharmacist health coaching within the community pharmacy. These outcomes are also backed by studies within health psychology that show that as affective associations; feelings associated with specific health behaviours, became more positive, behaviours associated with physical activity increased. (Kiviniemi et al., 2007; Van Cappellen et al., 2018) This suggests that incorporating models to encourage participants to modify health behaviours into clinical interventions would be favourable for participants. (Kiviniemi et al., 2007)

At the completion of the study, participants exhibited *positive feelings* about the service and acknowledged several favourable outcomes because of the service. For example, some participants reported that before health coaching with the pharmacist, they had been unclear why they were taking their medicines (or what the medicines were meant to treat) and now felt more knowledgeable about their medicines. It was also apparent from the interviews that participants appreciated the role of the pharmacist in facilitating improvements to their hypertension and would go back to the pharmacist to obtain advice from them in the future. Participants also acknowledged that the service would benefit others; by increasing health knowledge and reducing the burden on doctors if it were offered by additional pharmacies. The findings highlight that the coaching relationship was an important aspect of the health coaching experience. The role played by the pharmacist coach in the interpersonal relationship, the connection, and interactions with the coach, and how participants felt in that interaction, were important factors of this relationship. At a more practical level, these results support previous studies that discuss the value of pharmacy services individualised to patients, (McMillan et al., 2014; Wood et al., 2015), and the acceptance of and satisfactory experiences of patients who receive these unique services. (Wood et al., 2015) Conversely, in health coaching studies lacking face-to-face communication, relationship development was at times hampered. (Hinman et al., 2016)

Logistics of health coaching in pharmacy

The changes in participant behaviour, health beliefs, opinions, attitudes, and experiences were consistent with the findings from the post-study interviews with the pharmacists. Pharmacists observed that participant's outcomes had changed alongside health coaching. These improvements are related to both clinical targets; blood pressure, and non-clinical targets; beliefs, knowledge, and attitudes. Considering the promising results, they facilitated in participants, pharmacists also expressed positive views on the provision of health coaching within the community pharmacy.

Despite the benefits, pharmacists also described several logistical aspects that would need to be considered for health coaching to become an established professional pharmacy service available through community pharmacies in Australia. They described the need for careful planning relating to the scheduling and the content of the health coaching sessions. It has been previously noted that the use of motivational strategies and behaviour change techniques that are tailored to meet individual preferences to facilitate patients to reach goals can be challenging in a time-limited consultation especially in the absence of specific training in these techniques. (Hinman et al., 2016) However, pharmacists acknowledged the study proformas were beneficial, during busy periods as they overcame the need to plan discussion points for sessions and reiterated the concepts learned during training. Proformas are structured documents that may serve a role in guiding health professionals to reinforce particular educational points to patients (Pace-Bardon et al., 2017) and may also improve documentation of key information. (Thompson et al., 2004) The utilisation of proformas to guide health coaching sessions may account for the improvements to participants understanding of health coaching, beliefs about hypertension, and management of hypertension at the completion of the study as it prompted pharmacists to reiterate key points about hypertension to participants and also facilitated the monitoring of clinical and non-clinical information. Although the need to plan health coaching sessions were managed using proformas, the scheduling aspect required time management, teamwork, and cooperation within the pharmacy team. The pharmacists alluded to the need to ensure the conventional pharmacy operations continue without interruption from the administration of professional pharmacy services such as health coaching. Similar points were described by the pharmacy owner suggesting that consideration of these aspects is imperative if pharmacy health coaching is to be established as a

professional pharmacy service in Australia. Similarly, these issues have also been raised within previous literature investigating the implementation of professional services in Australian community pharmacies. (Moullin et al., 2016)

Clinical Implications

Consumer evaluations offer useful insight into the performance of health care providers and their services (Zhang et al., 2007), as well as patient willingness to accept services. (Suh, 2000) It also provides direction for service improvement pre and -post-initiation. (Panvelkar et al., 2009) The findings from the study indicated that pharmacist health coaching was associated positively with changed participant's opinions, attitudes, and experiences towards the service as well as their knowledge about and their management of hypertension. Research has previously shown that interventions based on changing participants' attitudes, knowledge, and experience can positively change their self-care behaviours towards the management of chronic health conditions. (Gohar et al., 2008) The present study supports this finding, whereby the provision of pharmacist health coaching over three months changed beliefs and experiences in participants with hypertension. This may be the underlying reason for the improvements to participants' clinical health outcomes in previous studies (DiDonato et al., 2013; Luder et al., 2016; Wertz et al., 2012), enabling them to be sustained long-term. (Lonie et al., 2017) As such pharmacist health coaching could be used for the management of other chronic health conditions; a facilitator to the implementation of pharmacist health coaching within Australian community pharmacies. (Singh et al., 2020b). In addition, the study identifies areas in which community pharmacists can focus on, such as the causes, and holistic management of hypertension when providing conventional pharmacy services to participants. These views add a valuable overview for guiding the training of pharmacists to health coach, the process of health coaching as well as the integration of the service into community pharmacy practice. It also encourages the expansion of the pharmacist's role towards patient-focused services, which could also be integrated into Australian GP practices to support GP workloads and to improve the quality of patient care.

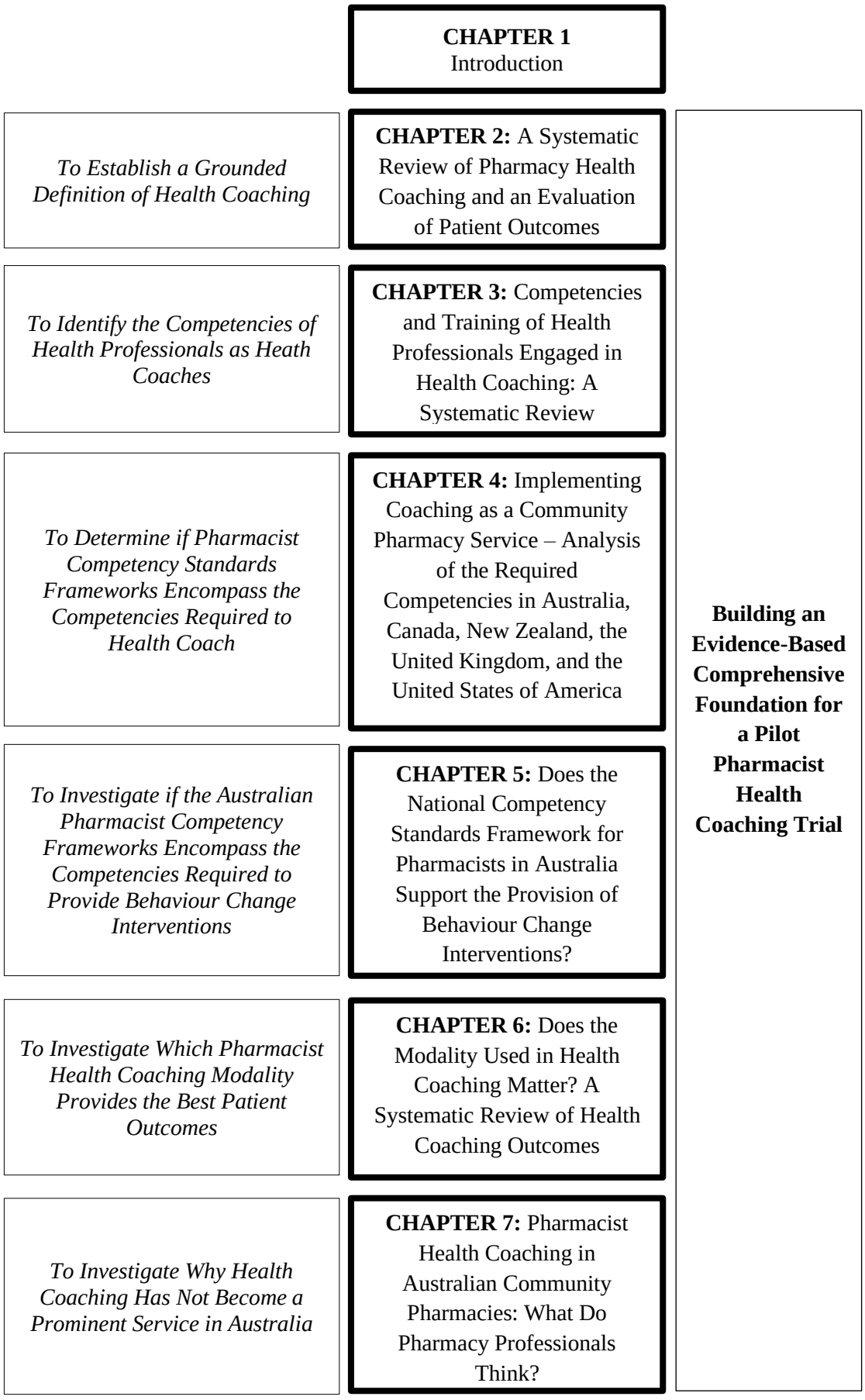
Although these outcomes coincided with the opinions and attitudes of the pharmacist health coaches, some logistical factors to the implementation of the service were also identified, which could be overcome through careful consideration and planning and were not considered barriers to the provision of health coaching in Australian community pharmacies.

Limitations

A limitation to this study was its small sample size, though is appropriate given that research involved a pilot trial. Another limitation to the present study is that only a single pharmacy site agreed to and recruited participants for the study. Despite these limitations, however, the present findings are novel - this is the first study to examine the experiences of participants and pharmacists towards health coaching. The results provide a rationale for future larger-scale studies.

Conclusion

This paper presents the experiences of stakeholders involved with community pharmacy health coaching which have not previously been investigated. Analysis of interview transcripts at the beginning and at the completion of the pharmacist health coaching program presented the participant's journey; they experienced a variety of changes, which otherwise may not have been revealed by quantitative outcome measures used in conventional health coaching studies. Participant's understanding of health coaching, beliefs about hypertension, management of hypertension improved. Their reflections on and experiences from the service were also positive. In the interviews with the pharmacists, the positive outcomes the participants experienced were reiterated, but they also revealed several logistical issues that would need to be considered to facilitate the implementation of the service in Australia. Together, this suggests there may be merit in further developing pharmacy-based health coaching services for participants with hypertension and other chronic health conditions.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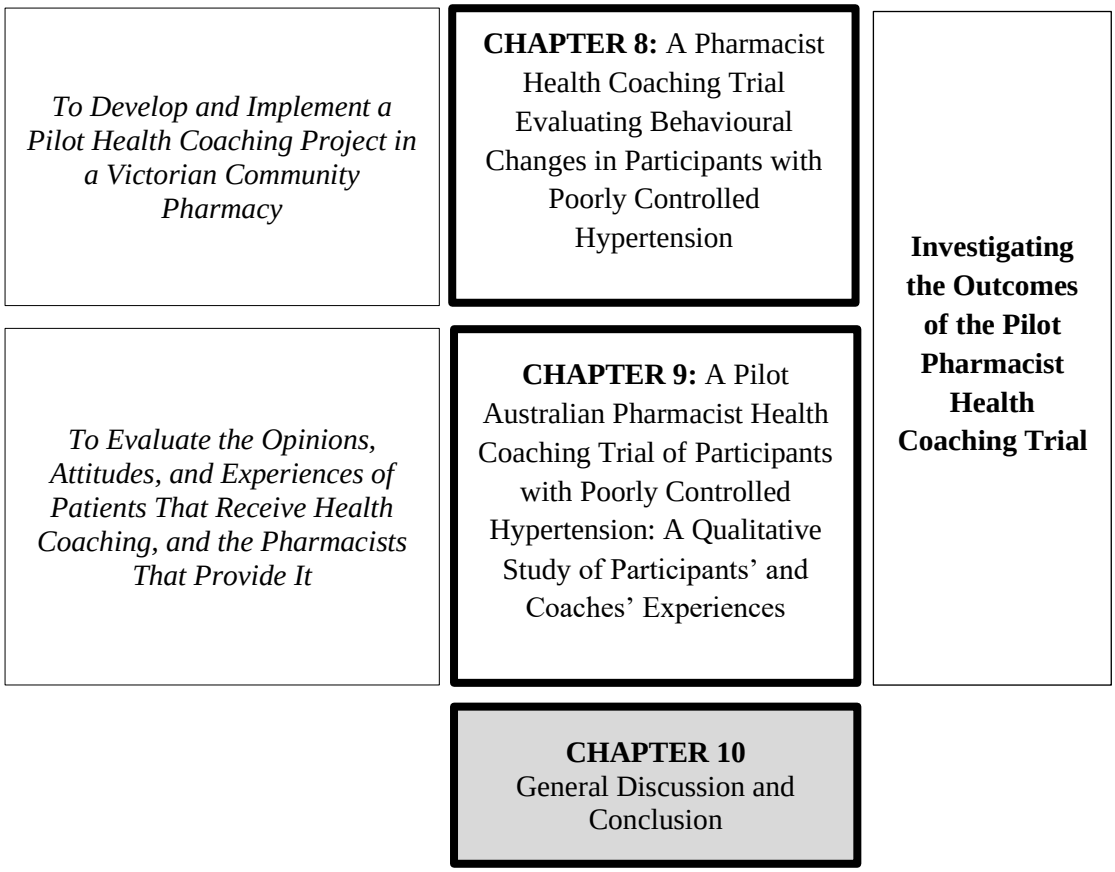
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CHAPTER 10

General Discussion and Conclusion

Chapter Overview

This chapter summarises the key findings present in this thesis. It will also discuss the issues and limitations that arose during the research. The translation of the research into practice by pharmacists and pharmacy students will be considered, and the chapter concludes with proposals for the future directions of pharmacist health coaching research.

10.1 Summary of Key Findings

The research contained within this thesis aligns with the current trend towards the provision of patient-centred professional pharmacy services being introduced into Australian community pharmacies to manage the growing burden of chronic health conditions within the community. Internationally, the provision of health coaching by community pharmacists has produced favourable clinical outcomes in patients with chronic health conditions, however, reports on the definition, pharmacist training, competencies, and service delivery, to name a few aspects, have been ambiguous leading to difficulties when making comparisons between patient outcomes. Hence, there was a need to build on existing international health coaching research and to synthesise evidence-based comprehensive knowledge about pharmacist health coaching to provide the framework for a pilot project in Australian community pharmacy.

This research was conducted in a stepwise fashion, incorporating multiple research strategies, and was divided into two phases. The first involved *Building an Evidence-Based Comprehensive Foundation for a Pilot Pharmacist Health Coaching Trial,* and the second involved *Investigating the Outcomes of the Pilot Pharmacist Health Coaching Trial.*

The commencement of phase one of the research strategy, *Building an Evidence-Based Comprehensive Foundation for a Pilot Pharmacist Health Coaching Trial* identified the need for a grounded definition of health coaching (Chapter 2). A systematic review enabled the identification of key themes within the existing definitions of pharmacist health coaching. The key themes include patient-centeredness, accountability of the health coach, follow-up sessions, having a partnership, and a goal. Frequently occurring themes extracted from the diverse individual definitions of health coaching enabled the formulation of a grounded definition. It was also imperative to include the process of behavioural change; the theoretical foundation of coaching within the grounded definition; *a service that is provided to patients by health care professionals (pharmacists) for the purpose of disease management/ health risk prevention. It involves a collaborative patient-centred interaction between the patient and coach for the purpose of a behavioural change, through the process of goal setting and follow-up. Both the*

coach and patient are held accountable for the patient's outcomes, though it is the role of the coach to provide expert information and facilitate the motivation of the patient in order to achieve their goal. The resultant definition, although specific to pharmacists, is flexible enough to be applied by other health professionals who may provide health coaching.

The systematic review also explored the key outcomes of and the optimal number of pharmacist health coaching sessions within the existing literature. The most common outcome of pharmacist health coaching was an improvement in health outcomes in patient populations with chronic health conditions, namely hypertension, depression, diabetes, and hypercholesterolemia. While the number of health coaching sessions required for patients to achieve optimal outcomes ranged from 1-12 sessions, it was suggested that an intermediate number of sessions would ensure that patients do not feel burdened and drop out of the study. These results guided the choice of the target population and number of health coaching sessions for the pilot pharmacist health coaching trial (Chapter 8).

A significant barrier to the development of the pilot pharmacist health coaching trial was the inconsistency within existing international competency frameworks for coaches in addition to the lack of available published peer-reviewed studies about the training of pharmacists who provided health coaching. In consideration of these gaps within the existing research, the grounded definition of health coaching was applied to identify literature referring to health professionals as health coaches (Chapter 3). Subsequently, the skills, knowledge, attitudes, and attributes of these professionals in the role of a health coach were compiled into nine competencies required for health professionals to health coach: (1) communicates effectively for the delivery of patient-centred care; (2) demonstrates team and leadership skills to optimise health care; (3) demonstrates an understanding of relevant, fundamental and evidence-based knowledge and undertakes lifelong learning to improve professional practice; (4) demonstrates tolerance and respect for individuals and groups from diverse backgrounds; (5) demonstrates professional behaviour and accountability; (6) demonstrates the ability to utilise empathy when communicating with patients; (7) demonstrates confidence; (8) identifies an area for development to improve competency; and (9) works systematically and coordinates activities. These competencies

could therefore be used to design a health coach training program for pharmacists taking part in the pilot health coaching trial.

Planning and design stages of the pilot pharmacist health coaching trial also emphasised the need to evaluate if existing pharmacist competency frameworks from AUS (and neighbouring NZ) and other developed countries in which pharmacists have successfully provided health coaching interventions; CAN, the UK and the USA include the nine competencies enabling health coaching (Chapter 4). Mapping revealed that pharmacists from AUS, CAN, and NZ all lacked the health coaching competency (7) "demonstrates confidence", whereas competency frameworks for pharmacists from both the UK and the USA included all competencies required to health coach. These findings iterated that competency-based training for pharmacists recruited for the pilot health coaching trial was necessary to ensure that are equipped with the skills and knowledge to confidently provide health coaching interventions.

The specifics regarding the training of pharmacists for the pilot trial required further clarification as our previous research suggested that Australian pharmacists potentially lacked confidence in the provision of health coaching interventions (Chapter 4). The scope of the Australian pharmacist competency standards is broad and encompasses a wide range of skills, knowledge, attitudes, and attributes to enable pharmacists to undertake a vast number of roles, but it does not specifically refer to the provision of behaviour change services such as health coaching. Furthermore, since the grounded definition of health coaching had previously identified the importance of behaviour change it was imperative to identify the specific skills, which need to be included within training and competency frameworks, to enable Australian pharmacists to effectively deliver patient-centred behaviour change interventions. The competences within each of the domains in the GHBC-CF were mapped to the Australian pharmacist competency framework. The GHBC-CF describes the foundation competences (F), behaviour change competences (BC), and behaviour change techniques required to provide behaviour change interventions at three different levels: low, medium, and high. The levels denote the complexity of the intervention being delivered. Mapping indicated that Australian pharmacists required training related specifically to the provision of behaviour change interventions. The competencies for which pharmacists require additional training are F12 'Ability to recognise barriers to and facilitators of

implementing interventions', BC4 'ability to agree on goals for the intervention', BC5 'capacity to implement behaviour change models in a flexible but coherent manner' and BC6 'capacity to select and skilfully apply the most appropriate intervention method (Chapter 6). Hence, the training of pharmacists for the pilot-controlled trial needed to include the theoretical basis of health coaching, the advantages of the service, the barriers to patients changing their health behaviours, and the process of health coaching (Chapter 8).

The innovation phase of this research also indicated that no studies had previously compared modalities of pharmacist health coaching. Therefore, careful selection of the modality used for the pilot trial was considered through a systematic review (Chapter 6). Several single health coaching modalities (e.g., face-to-face, telephone, and electronic) have successfully been used independently and used in combination by pharmacists to improve patient health outcomes. Comparisons made amongst the various modalities and resulting outcomes indicated that conclusions about the modality providing the greatest improvement in patient outcomes and the most pragmatic health coaching modality were not possible. Consequently, the face-to-face modality was favoured for the pilot trial (Chapter 8), as it enabled sustained rapport between the patient and coach and was considered convenient for patients ordinarily presenting to the pharmacy monthly for their medications. Despite, the limited data available on cost-effectiveness, the chosen modality was considered practical, as it did not require costs to be incurred by the research team.

The final step towards the planning and development of the pilot trial investigated the reasons why health coaching had not become a prominent service in Australia despite the international evidence supporting the role of community pharmacists as health coaches. A qualitative study was conducted with stakeholders within the pharmacy profession to evaluate their knowledge, opinions, and attitudes about the concept of health coaching as a service in community pharmacy (Chapter 7). The results of the study indicated that although stakeholders have positive views about health coaching in the Australian community pharmacy there were several barriers to its integration. These barriers included concerns about patient welfare, the pharmacist's existing knowledge, time management, the current business model of the pharmacy, and the lack of remuneration for the service at present. In consideration

of these factors, it was imperative that pharmacies with a commitment to the provision of community pharmacy services, willing to undergo health coach training, and committed to the completion of the trial be recruited for the pilot pharmacist health coaching trial (Chapter 8).

Each of these research outputs supported phase two of this research strategy, *investigating the Outcomes of Pilot Pharmacist Health Coaching Trial*, in which community-based pharmacists in Australia received evidence-based training to provide three health coaching sessions to participants with poorly controlled hypertension at monthly intervals. The innovative study explored not only the clinical outcomes in participants that received health coaching but also the changes to health behaviours: medication adherence, diet, and exercise with respect to the SOC approach (Chapter 8). The application of the SOC model by pharmacists has previously involved interviews and questionnaires, which although convenient do not provide a realistic representation of the cyclic nature of the SOC. A dynamic measure of SOC was established to investigate the behavioural outcomes of health coaching. The measure enabled pharmacists to readily identify a participant's stage of change and to tailor the coaching session accordingly to facilitate progress through the SOC towards the achievement of health behaviour goals established at the commencement of the trial.

The results of the pilot trial demonstrate that provision of monthly health coaching sessions over four months produced successful health outcomes in participants with poorly controlled hypertension. The participant's systolic blood pressure improved significantly from 138.53mmHg at session one to 131.60mmHg at session four ($p < 0.05$). These outcomes correlating with statistically significant changes to medication management and exercise-related health behaviour change from session one to session four; $p = 0.03$ and $p = 0.01$ respectively, whereby participants moved positively through the stages of change. In comparison, participants in the validation group who did not receive pharmacist health coaching did not experience any significant changes with respect to the SOC, supporting the role of health coaching in producing the favourable outcomes.

Improvements were also apparent in the participant's adherence to their antihypertensive medications, evident from the reduction in the mean ARMS score. The score decreased significantly from a mean of 15.60 to 13.05 ($p<0.05$) from session one to four.

Although significant improvements to waist circumference and weight were not evident from this study, the positive physiological and behavioural changes, however, propose a potential role for Australian community pharmacists as health coaches.

At the completion of the pilot trial, changes to the participant's mindset were also evident. Participants who received health coaching developed their understanding of hypertension, understanding of health coaching, and management of hypertension (Chapter 9). It is plausible that these changes occurred continually throughout the trial, and thus correlated with the participant's improved control of the modifiable health behaviours (exercise and medication management) and achievement of personal health goals (Chapter 8). Furthermore, it is reasonable to suggest that these internal changes to participant's psychology are likely to be sustained and instigate improvements into the future.

Similarly, the opinions, attitudes, and experiences of the pharmacists towards health coaching were also positive though revealed that there were several logistical factors: teamwork, planning, and time management that would need to be considered for service to become established in Australian community pharmacies (Chapter 9). These themes correlate with the concerns identified by the pharmacy stakeholders in Chapter 7 and thus reiterate the need for competency-based training (Chapter 5) and careful planning of future health coaching studies. An interview with the pharmacy owner at the completion of the pilot pharmacist health coaching trial also reiterated these findings and brought forward other logistical issues that would need to be carefully considered. These included the store layout, the business model of the pharmacy, and remuneration.

The results of the pilot pharmacist health coaching trial are significant, as no other health coaching study has previously investigated the changes to clinical outcomes, in addition to modifiable health behaviours, alongside changes to participants' understanding and coaches ' experiences of the service. These overarching findings provide evidence to support the training of Australian community

pharmacists to health coach and adopt the SOC approach. Together, they allow participant-centred and stage-directed health coaching, facilitating active progress through the SOC. The results also bring forward a unique role for Australian pharmacists and a means of improved patient care, health outcomes, health knowledge, and understanding for patients with chronic health conditions within the community.

Despite the international evidence, supporting innovative pharmacy services and the development of advanced pharmacy practice initiatives in Australia, there are aspects, which challenge implementation of these services in Australia. One of these barriers relates to the negative views held by some Australian general practitioners towards the expanding role of pharmacists, inevitably prolonging the fragmented structure of the Australian health care system and limiting the role of the pharmacist within primary healthcare. Another fundamental barrier is the lack of remuneration for professional pharmacy services, reflecting the lack of acceptance that stakeholders and the public have towards the role of the pharmacist. Therefore, without overcoming these barriers, promising services such as health coaching will not succeed.

10.2 Researcher Reflections

In chapter one, I reflected on my role as the researcher, health coach, and pharmacist in tandem and the potential conflicts of interest that I would endure as part of the research encompassed within this thesis. to track my journey and separate myself as a researcher and health coach, I kept a journal of my interactions with patients as a health coach. Periodically reviewing what I had recorded in my journal enabled me to identify instances of potential conflicts of interest and implement practices to minimise this. For example, at times participants showed interest in the research, exciting conversations about it. I soon realised that this had the potential to affect the behavioural outcomes and qualitative results of the study, so would steer conversations about the study to the end of the health coaching sessions and endeavoured to keep the discussions centred on the participant and their personal goals.

My journal entries also captured the rapport I immediately established with the participants and the subsequent joy I experienced and shared with them when they achieved a personal health goal. I also

shared disappointment with participants when they had not achieved their monthly targets; however, encouraged participants to remain motivated and optimistic, as setbacks are common towards the pursuit of health goals. In my entries, I also confessed my frustration with participants, following up participants was one of the biggest challenges I faced whilst undertaking this research, which related to my role as a researcher. The main thought I feared as a researcher was my inability to complete the pilot health coaching trial within the approved period, which was invariably associated with the collection of participant data. These concerns were often triggered when participants did not attend their mutually agreed upon health coaching appointments. However, upon reflection and guidance from my supervisors, I quickly realised that these behaviours and obstacles were typical in an ecologically valid sample. While as a health coach, I learned that I needed to remain confident and continue to motivate participants to complete the sessions towards improved health outcomes.

Overall, this research has built on my academic knowledge, and my resilience to deal with and analyse hidden challenges by using logic and depth of reasoning. I know that these skills will be valuable in my professional careers and personal life now and in the future. Through this dissertation, I have also acquired the techniques to put forward a proposal in a straightforward, rational, and analytical manner, I know that this will help in my forthcoming endeavours helping me recognise and present reasoned conflicts on issues in the process of solving them. Lastly, I broadened my skills on the ethics, methodologies, statistical strategies, and processes of conducting research, thus applying these learnings will help in future careers to easily ascertain the appropriate strategies to use in proving solutions to problems.

As a pharmacist, I derived satisfaction through observing the improvements in the participant's blood pressure but also helping them develop new skills. Reflection and follow-up were also important processes undertaken by the participants during the pilot pharmacist health coaching trial. This kept participants accountable to themselves and enabled them to recognise and reflect on their progress, achievements, their downfalls, and challenges in order to modify their action plans towards fulfilling and maintaining their personal health goals. These skills are transferrable and can be applied by the participants to effectively manage other health conditions in the future.

10.3 Main Strengths and Limitations

This thesis is the first comprehensive study to describe the provision of health coaching as a professional pharmacy service through Australian community pharmacy. The approaches and results described in this chapter are derived from the breadth of research undertaken. The distinct studies provide an extensive assessment of existing pharmacist health coaching studies exposing the gaps and paucity within the literature.

The limitations of the individual research strategies undertaken as part of this thesis have been discussed within their respective papers. Therefore, this section discusses the general limitations not formerly discussed in the previous chapters.

The primary limitation of this thesis is the focus on the outcomes of health coaching provided by community pharmacists in Australia. However, it is important to acknowledge that the research conducted in preparation for the pilot health coaching trial was not limited to the Australian context. Thus, the preliminary research outcomes and those of the pilot health coaching trial could readily be applied to and adapted by other developed countries.

The pilot pharmacist health coaching trial was built on the findings of the very extensive preparatory work that was undertaken through systematic reviews, document comparisons, and interviews. This is a strength of this thesis as unlike previous health coaching research, each methodological process was thoroughly reported, evidence-based, and dependent on the preceding research findings, thus, ensuring that resultant data were reliable and reproducible in the future. The combination of diverse research approaches also enabled the research findings to be triangulated. For example, the application of evidence-based health coach training to pharmacists resulted in improved participants' understanding of their health, evident through interviews, which correlated with clinical improvements to participants' hypertension and modifiable health behaviours.

10.4 Recommendations for Future Research

This thesis offers an innovative analytical and methodological approach to health coaching research. However, the results contained within this thesis could be advanced in several directions:

i. Future health coaching studies centred on the grounded definition of health coaching are necessary given the paucity of the existing health coaching studies in the international setting;
ii. Larger studies across multiple community pharmacies and patient populations in Australia are necessary to confirm the findings of the pilot health coaching trial and to investigate if variables such as location, socio-economic status, cultural background, disease states affect the efficacy of health coaching by community pharmacists. Economic analysis of the service is also warranted to determine the widespread implementability of the service;
iii. Comprehensive reporting of future health coaching studies would improve the feasibility of conducting an economic analysis of health coaching services within the community pharmacy and support potential remuneration and funding by providers;
iv. Subsequent health coaching studies utilising competency-based training are necessary to evaluate whether evidence-based training improves the regulation and quality of health coaching and more importantly, the health outcomes of patients receiving the service;
v. The competencies enabling health coaching and the competency gaps within the Australian pharmacist's competency framework related to the provision of behaviour change interventions such as health coaching provides university curriculum developers the opportunity to include training and education and evaluate outcomes;
vi. Lastly, the work in this thesis was mostly undertaken prior to the COVID-19 pandemic, before the rapid expansion of telehealth. Given the significant changes in pharmacy operations during the pandemic such as reducing face-to-face pharmacist-patient interaction times in pharmacies, larger trials, which determine patient outcomes of online or phone coaching, are needed.

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APPENDIX

PUBLICATIONS

Singh, H. K., Kennedy, G. A., & Stupans, I. (2019). A Systematic Review of Pharmacy Health Coaching and an Evaluation of Patient Outcomes. *Research in Social and Administrative Pharmacy*, *15*(3), 244-251.

Singh, H. K., Kennedy, G. A., & Stupans, I. (2020). Pharmacist Health Coaching in Australian Community Pharmacies: What Do Pharmacy Professionals Think? *Health and Social Care in the Community*, *28*, 1190-1198.

Singh, H. K., Kennedy, G. A., & Stupans, I. (2020). Competencies and Training of Health Professionals Engaged in Health Coaching: A Systematic Review. *Chronic Illness*, 1742395319899466.

Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the Modality Used in Health Coaching Matter? A Systematic Review of Health Coaching Outcomes. *Patient Preference and Adherence*, *14*, 1477.

Singh, H., Kennedy, G. A., & Stupans, I. (2020). A Pilot Australian Pharmacist Health Coaching Trial of Participants with Poorly Controlled Hypertension: A Qualitative Study of Participants' and Coaches' Experiences. *Patient Preference and Adherence.* (Accepted 11/01/2021)

Singh, H., Kennedy, G. A., & Stupans, I. (2020). Implementing Coaching as a Community Pharmacy Service – Analysis of the Required Competencies in Australia, Canada, New Zealand the United Kingdom, and the United States of America. *Health and Social Care in the Community.* (Submitted 13/05/2020)

Singh, H., Kennedy, G. A., & Stupans, I. (2020). A Pharmacist Health Coaching Trial Evaluating Behavioural Changes in Participants with Poorly Controlled Hypertension. *BMC Family Practice.* (Submitted 11/06/2020)

Singh, H., Kennedy, G. A., & Stupans, I. (2020). Does the National Competency Standards Framework for Pharmacists in Australia Support the Provision of Behaviour Change Interventions? *Health Promotion Journal of Australia*. (Submitted 28/10/2020)

CONFERENCE PRESENTATIONS

Singh, H., Kennedy, G. A., & Stupans, I. (2018, December) *Interviews with Key Stakeholders: Opinions About and Attitudes to Pharmacy Health Coaching*. Poster presented at Australasian Pharmaceutical Science Association (APSA), Adelaide, South Australia.

Singh, H., Kennedy, G. A., & Stupans, I. (2019, December) *A Comparison of Pharmacist Competency Frameworks to Competency Frameworks of Other Health Professionals Engaged in Health Coaching.* Paper presented at Australasian Pharmaceutical Science Association (APSA), Melbourne, Victoria.

Singh, H., Kennedy, G. A., & Stupans, I. (2020, November) *A Pilot Pharmacist Health Coaching Trial Investigating Changes to Modifiable Health Behaviours*. e-Poster presented at Australasian Pharmaceutical Science Association (APSA)

Singh, H., Kennedy, G. A., & Stupans, I. (2021, June) *Designing Health Coach Training for Australian Community Pharmacists.* Poster to be presented at Life Long Learning in Pharmacy (LLLP), Dublin, Ireland.

AWARDS

Outstanding Poster Presentation in Pharmacy Practice (2020, November) Australasian Pharmaceutical Science Association (APSA).

Appendix 1. Detailed Table Outlining the Mapping Process of Australian Pharmacist Competencies to the Foundation and Behaviour Change Competencies of the GHBC-CF

Australian pharmacist competency Domains	Competency Standards	Foundation Competencies	Behaviour Change Competencies
Domain1: Professionalism and ethics	1.1 Uphold professionalism in practice	F1, F5	
	1.2 Observe and promote ethical standards	F1	
	1.3 Practice within applicable legal framework	F1	
	1.4 Maintain and extend professional competence	F1	
	1.5 Apply expertise in professional practice	F1, F7, F8, F9	
	1.6 Contribute to continuous improvement in quality and safety	F1, F2,	BC8, BC9
Domain 2: Communication and collaboration	2.1 Collaborate and work in partnership for the delivery of patient centred, culturally responsive care	F1, F3, F5, F7, F10	BC8
	2.2 Collaborate with Professional colleagues	F1	BC7
	2.3 Communicate effectively	F4, F6, F9	
	2.4 Apply interpersonal communication skills to address problems	F1, F8, F9, F10	
Domain 3: Medicines management and patient care	3.1 Develop a patient centred, culturally responsive approach to medication management	F11	
	3.2 Implement the medication management strategy or plan		
	3.3 Monitor and evaluate medication management		
	3.4 Compound medicines		
	3.5 Support Quality Use of		

	Medicines		
	3.6 Promote health and well-being	F1, F7, F8, F10	BC1, BC12
Domain 4: Leadership and management	4.1 Show leadership of self	F7	BC2
	4.2 Manage professional contribution	F1, F7	BC3, BC4, BC8, BC10, BC11, BC12
	4.3 Show leadership in practice	F1	
	4.4 Participate in organisational planning and review		
	4.5 Plan and manage physical and financial resources		
	4.6 Plan, manage and build human resource capability		
	4.7 Participate in Organisational management	F1	BC1
Domain 5: Education and research	5.1 Deliver education and training	F8	
	5.2 Participate in research		
	5.3 Research, synthesise and integrate evidence into practice		

Appendix 2. Interview Questions

1. Have you heard very much about health coaching? Probe for where and how.

2. Where did you hear about it?

3. What do you know about it?

4. What sorts of benefits do you think could be achieved for patients with health coaching?

5. What health conditions do you believe will benefit from health coaching?

6. What would make a particular health condition suitable for coaching?

7. Do you see pharmacy as a potential site for health coaching?

8. What makes it a good site for health coaching?

9. What makes it an unsuitable site for health coaching?

10. Do you think that some of the pharmacy chains will be a barrier to the provision of health coaching within pharmacy?

11. What do you believe these barriers to be?

12. What skills do you believe are necessary for health coaching?

13. Do you think pharmacists have the skills to health coach?

14. Do you believe pharmacists already have the competencies to health coach?

15. Do you think pharmacists would benefit from a health coaching training program?

16. What do you think the training program should involve?

17. Why do you think health coaching has not become a prominent service within pharmacy in Australia?

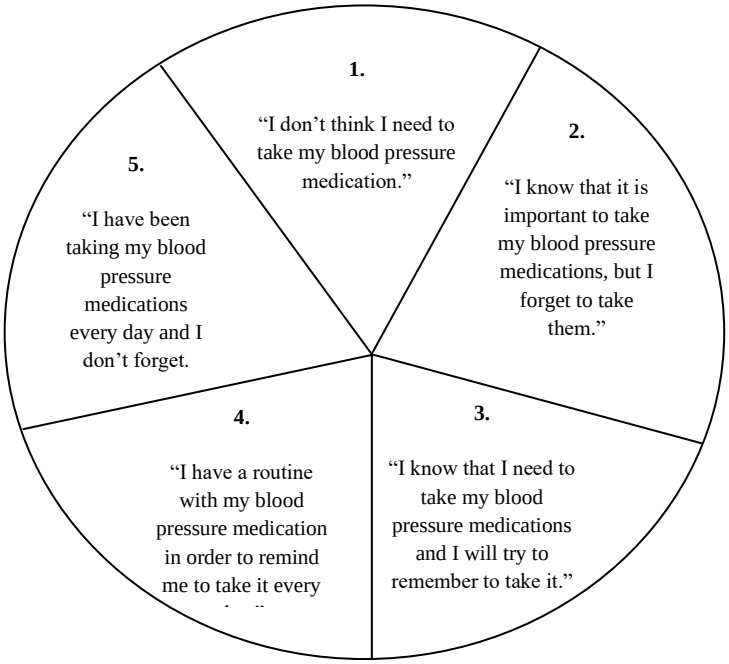
18. What do you think about the community pharmacy services that are currently remunerated?

19. Do you think health coaching could be remunerated?

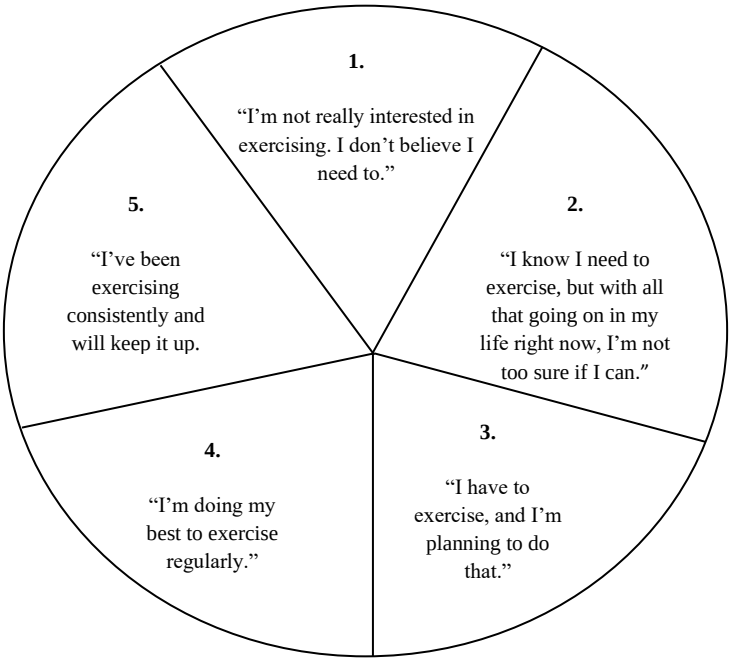
20. Does health coaching fit into the pharmacy business model? Why/why not?

Appendix 3. Stages of Change Chart- Medication Management, Stages of Change Chart- Exercise, Stages of Change Chart- Diet

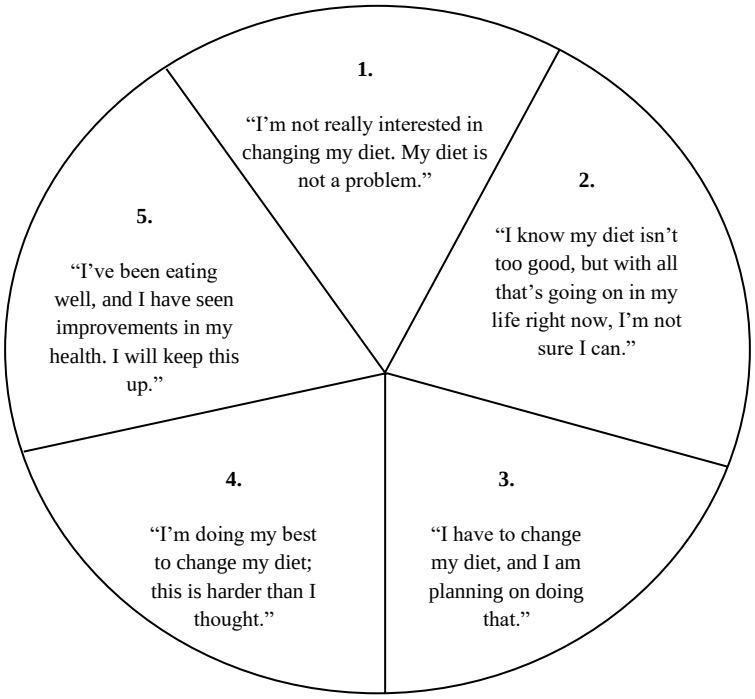
Stages of Change Chart- Medication Management



Stages of Change Chart- Exercise



Stages of Change Chart- Diet



Appendix 4. Question guide with illustrative questions

Interviewee	Topic	Questions
Participants	*Experiences*	What health goals would you like to achieve from the health coaching sessions? When you think about the goals you set yourself, how does it make you feel? How did you feel about the health coaching sessions? Do you think that health coaching is a service that all pharmacies should offer?
	Knowledge	What do you know about health coaching? What is hypertension and how do you manage it?
	Opinions and attitudes	What would you like your blood pressure to be? What will you do to achieve your goal? Did you achieve your goals from last month? How does it make you feel?
Pharmacists	*Knowledge*	What is health coaching?
	Opinions and attitudes	Were the health coaching sessions difficult to run? Did the coaching distract you from your general pharmacy duties? How do you feel participants felt about participating in this study? Is there anything that you would change about the program? Would you be willing to continue to offer the health coaching program? What was the change in BP that your participants experienced?

Appendix 5. Interviews with Key Stakeholders Project Ethics Approval

RMIT UNIVERSITY

College Human Ethics Advisory Network (CHEAN)
College of Science, Engineering and Health

Email: seh-human-ethics@rmit.edu.au
Phone: [61 3] 9925 4620
Building 91, Level 2, City Campus/Building 215, Level 2, Bundoora West Campus

22 June 2018

Professor Ieva Stupans
School of Health and Biomedical Sciences
RMIT University

Dear Professor Stupans

SEHAPP 36-18 Interviews with key stakeholders: opinions of attitudes to pharmacy health coaching

Thank you for submitting your amended application for review.

I am pleased to inform you that the CHEAN has approved your application for a period of **12 Months** from the date of this letter to **22 June 2019** and your research may now proceed.

The CHEAN would like to remind you that:

All data should be stored on University Network systems. These systems provide high levels of manageable security and data integrity, can provide secure remote access, are backed up on a regular basis and can provide Disaster Recover processes should a large scale incident occur. The use of portable devices such as CDs and memory sticks is valid for archiving; data transport where necessary and for some works in progress. The authoritative copy of all current data should reside on appropriate network systems; and the Principal Investigator is responsible for the retention and storage of the original data pertaining to the project for a minimum period of five years.

Please Note: Annual reports are due on the anniversary of the commencement date for all research projects that have been approved by the CHEAN. Ongoing approval is

conditional upon the submission of annual reports failure to provide an annual report may result in Ethics approval being withdrawn.

Final reports are due within six months of the project expiring or as soon as possible after your research project has concluded.

The annual/final reports forms can be found at:
www.rmit.edu.au/staff/research/human-research-ethics

Yours faithfully,

Associate Professor Barbara Polus
Chair, Science Engineering & Health
College Human Ethics Advisory Network

Cc Student Investigator/s: Ms Harjit Kaur Singh, School of Health & Biomedical Sciences
Other Investigator/s: Prof Gerard Kennedy, School of Health & Biomedical Sciences

Appendix 6 Participant Information Consent Form (PICF) For Interviews with Stakeholder Study

RMIT UNIVERSITY

Participant Information Sheet/Consent Form

Title	Interviews with Key Stakeholders: opinions of and attitudes to pharmacy health-coaching.
Chief Investigator/Senior Supervisor	Ieva Stupans
Associate Investigator(s)/Associate Supervisors	Gerard Kennedy Harjit K Singh (research student)

What does my participation involve?

1 Introduction

You are invited to take part in this research project, which is called **Interviews with Key Stakeholders: opinions of and attitudes to pharmacy health coaching.** You have been invited because you have been considered a key stakeholder within the pharmacy profession. Your contact details were obtained from internet sources or have been provided by other key stakeholders who considered that you would be able to provide valuable insights in our study.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative or friend.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:
• Understand what you have read
• Consent to take part in the research project

You will be given/emailed a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

Health coaching is a service that is provided to patients by health care professionals (pharmacists) for the purpose of disease management/ health risk prevention. It involves a collaborative patient -centered interaction between the patient and coach for the purpose of a behavioral change, through the process of goal setting and follow-up. Both the coach and patient are held accountable for the patients outcomes, though it is the role of the coach to provide expert information and facilitate motivation of the patient in order to achieve their goal.

Internationally the provision of health coaching through community pharmacy has shown benefits in health outcomes in patients with chronic conditions. Despite this however, health coaching is a service that is not provided within community pharmacy in Australia. This may be attributed to limited Australian health coaching studies.

The aim of this project is to interview key stakeholders within the pharmacy profession in order to evaluate their opinions and attitudes on the concept of health coaching. The project also aims to identify gaps in knowledge about health coaching within the pharmacy profession and reasons for it still being a growth area and what could be done to expedite it within pharmacy practice in Australia.

We believe that the outcomes of our research could be used to increase the awareness of health coaching within the pharmacy profession and see the development of health coach training programs for pharmacists so that the concept can be expedited into pharmacy practice in Australia.

The results of this research will be used by the student researcher Harjit K Singh as part of obtaining a Doctor of Philosophy degree.

3 What does participation in this research involve?

If you agree to participate you will be asked to sign a consent form. By signing this form, you are agreeing to participate in the research and are also agreeing to the interview being recorded as part of this research. You are also agreeing to be asked to refer other stakeholders that may be interested in participating in the project by sending our study PICF to them. You are at no obligation to do this, nor will you be penalised for not providing any referrals. You do not have to participate in the study if you do not wish to do so and can also make referrals even if you do not wish to participate. Upon receiving an email or telephone confirmation from the referred stakeholder that they are interested in participating in the study, the research student will make contact with them through an invitation email.

Participants will be interviewed once by the research student for approximately 45-60minutes. If you choose to take part the student researcher will organise a location for the interview convenient for you which will ensure your privacy and confidentiality. This may be your place of work or via telephone if that is convenient for you.

This study involves the audio recording of your interview with the researcher. You will be reminded of this prior to the interview. You may ask the researcher to turn the recorder off at any time you like, and are free to discuss only what you want to discuss. You can withhold any information you wish. Neither your name nor any other identifying information will be associated with the audio or audio recording or the transcript. Only the research team will be able to listen to the recordings.

The tapes will be manually transcribed by the student researcher. These transcripts maybe analysed manually and/or using computer software such as NVivo. Transcripts of your interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your name nor any other identifying information (such as your voice) will be used in presentations or in written products resulting from the study.

The interviews will follow a structured format and each participant stakeholder will be asked the same questions about health coaching. The research student may ask additional questions based on your responses to these questions.

There are no costs associated with participating in this research project, nor will you be paid.

4 Other relevant information about the research project

It is anticipated that up to 20 stakeholders will take part in this project. Stakeholders from prominent pharmacy organisations and groups will be approached about the study.

5 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your relationship with the researchers or with RMIT University.

You may stop the interview at any time. Unless you say that you want us to keep them, any recordings will be erased and information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.

6 What are the possible benefits of taking part?
We cannot guarantee or promise that you will receive any benefits from this research; however, you may appreciate contributing to knowledge. Possible benefits may include increased awareness about health coaching within the pharmacy profession.

7 What are the risks and disadvantages of taking part?
The risks and disadvantages experienced upon participation in this project are low; however, participation may involve taking some time out of a work day which could be inconvenient.

You may feel that some of the questions we ask are stressful or upsetting. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately. If you become upset or distressed as a result of your participation in the research project, members of the research team will be able to discuss appropriate support for you.

8 What if I withdraw from this research project?
If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify a member of the research team.

You have the right to have any unprocessed data withdrawn and destroyed, providing it can be reliably identified.

9 What happens when the research project ends?
At the completion of the research project it is anticipated that the information gathered will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified, except with your permission.

How is the research project being conducted?

10 What will happen to information about me?
Interviews will be recorded on a digital audio recorder and then transcribed manually into a word document using a computer. Transcripts will be analysed using computer – assisted qualitative data analysis (CAQDAS) such as NVivo. NVivo is software which allows researchers to categorise and analyse qualitative information into themes and attributes. The analysis of transcripts may also be undertaken manually through identification of recurring themes amongst the transcripts.

Any information that could potentially identify you will be removed from the transcript.
Your response will be treated with full confidentiality.

The interviews will be analysed by members of the research team. It is anticipated that the results of this research project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. You will be notified upon publication of study results.

All audio recordings will be erased after transcription. However, other research data (interview transcripts and analysis) will be retained on a password-protected electronic file on the RMIT University network for a period of five years before being destroyed.

By signing the consent form you consent to the research team collecting and using information from you for the research project. Any information obtained in connection with this research project that can identify you will remain confidential

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the research team. You also have the right to request that any information with which you disagree be corrected. Please inform the research team member named at the end of this document if you would like to access your information.

Any information that you provide can be disclosed only if (1) it is protect you or others from harm, (2) if specifically allowed by law, (3) you provide the researchers with written permission. Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored.

11 Who is organising and funding the research?

This research project is being conducted by Prof. Ieva Stupans, Prof. Gerard Kennedy and Harjit K Singh (research student). This research has not been funded.

12 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). This research project has been approved by the RMIT University HREC.
This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

13 Further information and who to contact

If you want any further information concerning this project, you can contact the researcher or any of the following people:

Research contact person

Name	Ieva Stupans
Position	Chief investigator / Senior Supervisor
Telephone	
Email	

Name	Gerard Kennedy
Position	Co-investigator /Associate supervisor
Telephone	
Email	

Name	Harjit Kaur Singh
Position	Research Student
Telephone	
Email	

14 Complaints

Should you have any concerns or questions about this research project, which you do not wish to discuss with the researchers listed in this document, then you may contact:

Reviewing HREC name	RMIT University
HREC Secretary	
Telephone	
Email	human.ethics@rmit.edu.au
Mailing address	Research Ethics Co-ordinator Research Integrity Governance and Systems RMIT University GPO Box 2476 MELBOURNE VIC 3001

Consent Form

Title	Interviews with Key Stakeholders: opinions of and attitudes to pharmacy health coaching. coaching
Chief Investigator/Senior Supervisor	Ieva Stupans
Associate Investigator(s)/Associate Supervisors	Gerard Kennedy Harjit K Singh (research student)

Acknowledgement by Participant

I have read and understood the Participant Information Sheet.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my relationship with RMIT.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print) _____

Signature _____ Date _____

Declaration by Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Researcher† (please print) _____

Signature _____ Date _____

† An appropriately qualified member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.

Appendix 7. Invitation email to Stakeholders

Invitation email to stakeholders (template):

Dear Sir/Madam,

Interviews with Key Stakeholders: opinions of and attitudes to pharmacy health coaching.

We are a group of health professionals from RMIT University. We are conducting interviews as part of a postgraduate research project to evaluate the opinions and attitudes that key stakeholders within the Pharmacy Industry have on the concept of health coaching.

As a key stakeholder within the Pharmacy Industry you are in an ideal position to give us valuable information from your own perspective.

The interview will take around 45 to 60 minutes and will be informal. We are simply trying to capture your attitudes and opinions on pharmacy health coaching. Your responses to the questions will be audio recorded and will be kept confidential. Upon completion of the interview the audio recording will be transcribed and the audio recording destroyed. Each interview will be assigned a number code to help ensure the personal identifiers are not revealed during the analysis and write up of findings.

There is no compensation for participating in this study. However, your participation will be a valuable addition to our research and findings could lead to greater understanding of health coaching within the profession and industry.

If you are willing to participate please suggest a day and time that suits you and I'll do my best to be available. If you have any questions please do not hesitate to ask.

If you think this study would be of interest to other stakeholders within the pharmacy industry that you may know please forward this information to them. There is no obligation for you to do this, nor will there any penalty if you do not provide any referrals. I will not reveal your identity when I contact the potential participants whom you have referred.

Kind regards
Harjit
(Interviewer)

Harjit K Singh, BPharm(Hons), BPharmSc,
PhD Candidate
Discipline of Pharmacy
School of Health and Biomedical Sciences
RMIT University
Bundoora
VIC 3083

Appendix 8. Pilot Pharmacist Health Coaching Trial Ethics Approval

RMIT UNIVERSITY

Human Research Ethics Committee (HREC)
Research and Innovation office
NH&MRC Code: EC00237

Notice of Approval

Date:	**21 December 2019**
Project number:	**21778**
Project title:	***A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension***
Risk classification:	**More than low risk**
Chief investigator:	**Professor Ieva Stupans**
Approval period:	From: **21 December 2018** To: **31 December 2019**

The above application has been approved by the RMIT University HREC as it meets the requirements of the *National statement on ethical conduct in human research* (NH&MRC, 2007).

The following documents have been reviewed and approved:

Title	Version	Date
21778 Stupans aplication	v. 4	7 December 2018
Recruitment poster	v. 4	7 December 2018
PICF patient	v. 4	7 December 2018
PICF pharmacist	v. 4	7 December 2018
Pharmacist training outline	v. 4	7 December 2018
Interview questions asked by pharmacists	v. 4	7 December 2018
Interview questions asked by research student	v. 4	7 December 2018
Post-training reflection form	v. 4	7 December 2018
Record of participant recruitment	v. 4	7 December 2018
Case report forms	v. 4	7 December 2018
Trial protocol	v. 4	7 December 2018

The following documents have been noted:

Title	Date
Response to reviewers	20 December 2018

Terms of approval:

1. **Responsibilities of chief investigator/principal investigator**[1]
   It is the responsibility of the above chief investigator to ensure that all other investigators and staff on a project are aware of the clinical protocol and terms of approval and to ensure that the project is conducted as approved by HREC. Approval is valid only whilst the chief investigator holds a position at RMIT University.
2. **Amendments**
   Approval must be sought from HREC to amend any aspect of a project. To apply for ethics approval of an amendment use the Request for Amendment Form, available on the RMIT Human Research Ethics website and submitted to the HREC secretary. Amendments must not be implemented without first gaining approval from HREC.
3. **Adverse events**

[1] The Chief Investigator, Co-ordinating Principal Investigator or Lead Investigator is the person with overall responsibility for the research project. For projects conducted at multiple sites, the Principal Investigator is the person with responsibility for managing the research project at each site.

RMIT UNIVERSITY

Human Research Ethics Committee (HREC)
Research and Innovation office
NH&MRC Code: EC00237

You should notify the HREC immediately (within 24 hours) of any serious or unanticipated adverse effects of the research on participants, and unforeseen events that might affect the ethical acceptability of the project. This notification can be made via email: humanethics@rmit.edu.au Following notification, an Adverse Event Report will need to completed and submitted.

4. **Annual reports**
   Continued approval of this project is dependent on the submission of an annual report. Annual reports must be submitted by the anniversary of approval (21 December 2019) of the project for each full year of the project. If the project is of less than 12 months duration then a final report only is required.
5. **Final report**
   A final report must be provided within six months of the end of the project. HREC must be notified if the project is discontinued before the expected date of completion.
6. **Monitoring**
   Projects may be subject to an audit or any other form of monitoring by the HREC at any time.
7. **Retention and storage of data**
   The investigator is responsible for the storage and retention of original data according to the requirements of the *Australian code for the responsible conduct of research* (2018) and relevant RMIT policies, including those relating to Research Data Management and Information Management.
8. **Special conditions of approval**
   Nil.
9. **Other conditions of approval**
   I. The clinical trial must be conducted in a way that is consistent with National Statement and Good Clinical Practice Guidelines (GCPs). For information on GCPs in an Australian context please refer to *The Australian Clinical Trial Handbook: A simple, practical guide to the conduct of clinical trials to International standards of Good Clinical Practice (GCP) in the Australian context*
   II. The chief investigator is required to register and maintain registration of this clinical trial on the Australian and New Zealand Clinical Trial Registry (ANZCTR): http://www.anzctr.org.au/ Clinical trials must be prospectively registered, that is before the first participant is recruited.
   III. Where clinical trials use an unapproved therapeutic good they must be notified to the Therapeutic Goods Administration (TGA) via the Clinical Trial Notification (CTN) or Clinical Trial Exemption (CTX) scheme. Such notifications must be made subsequent to HREC approval and prior to the use of the goods, and via the RMIT account administered by Research Governance. Recruitment may not commence until the CTN or CTX has been notified to the TGA.
   IV. A Clinical Trial Research Agreement (CTRA) is required for sponsored collaborative and/or multi-site clinical research. A copy of the final CTRA must be provided to the HREC when it is available.

In any future correspondence please quote the project number and project title above.

Prof Stephen Bird
Chairperson
RMIT HREC

cc: Dr Peter Burke, HREC secretary
Ms Harjit Kaur Singh, Research student
Professor Gerard Kennedy, Co-investigator/Associate supervisor

Appendix 9. Australian New Zealand Clinical Trials Registry (ANZCTR) approval notice

Your ACTRN (registration number): ACTRN12618001839291p

info@actr.org.au <info@actr.org.au>
Mon 12/11/2018 11:12 AM
To: Harjit Singh
Cc: Ieva Stupans

Dear Harjit Kaur Singh and Ieva Stupans,

Re: A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension.

Thank you for submitting the above trial for inclusion in the Australian New Zealand Clinical Trials Registry (ANZCTR).

Your trial has now been successfully registered and allocated the ACTRN: ACTRN12618001839291p

Web address of your trial: http://www.ANZCTR.org.au/ACTRN12618001839291p.aspx
Date submitted: 6/11/2018 3:10:59 PM
Date registered: 12/11/2018 11:12:34 AM
Registered by: Harjit Kaur Singh
Principal Investigator: Ieva Stupans

If you have already obtained Ethics approval for your trial, please send a copy of at least one Ethics Committee approval letter to info@actr.org.au or by fax to (+61 2) 9565 1863, attention to ANZCTR.

Note that updates should be made to the registration record as soon as any trial information changes or new information becomes available. Updates can be made at any time and the quality and accuracy of the information provided is the responsibility of the trial's primary sponsor or their representative (the registrant). For instructions on how to update please see http://www.anzctr.org.au/Support/HowToUpdate.aspx.

Please also note that the original data lodged at the time of trial registration and the tracked history of any changes made as updates will remain publicly available on the ANZCTR website.

The ANZCTR is recognised as an ICMJE acceptable registry (http://www.icmje.org/about-icmje/faqs/clinical-trials-registration/) and a Primary Registry in the WHO registry network (http://www.who.int/ictrp/network/primary/en/index.html).

If you have any enquiries please send a message to info@actr.org.au or telephone +61 2 9562 5333.

Kind regards,
ANZCTR Staff
T: +61 2 9562 5333
F: +61 2 9565 1863
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Appendix 10. Pilot Pharmacist Health Coaching Trial Protocol

Trial Protocol

Trial Title: A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension.

Protocol Version: 12.0

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Trial Synopsis

Title of trial	A pilot trial of health coaching in community pharmacy: the outcomes of participants with hypertension.
Medical condition under consideration	Essential hypertension
Purpose of trial	To determine if there is an association with health coaching provided by a community pharmacists and an improvement in blood pressure.
Trial objectives	1. Establish an evidence based health coach training program 2. Train community pharmacists to health coach using the evidence based program 3. To investigate the outcomes of evidence based health coaching provided to participants with essential hypertension. These outcomes include the change in : a) Participants' systolic and diastolic blood pressure from baseline b) Participants' understanding of their medications and adherence to them c) Participants' weight and health behaviours (e.g. diet, medication management, body mass index (BMI), waist circumference, exercise) d) Evaluate The participants' reflections during and at the completion of health coaching e) The health coaches' reflections during and at the completion of health coaching
Trial design	This trial is before-and-after without control trial
Duration of trial	6 months
Trial efficacy end points	The primary outcome is the change in a participants' blood pressure from baseline to end of trial as a result of the health coaching in intervention Secondary outcomes are the change in participants: understanding of their medications and adherence to them, health behaviours and reflections and

	perceptions before and after health coaching. The secondary outcomes also include the change in the health coaches' reflections during and at the completion of health coaching.
Safety evaluation	Assessment of blood pressure and other adverse events will occur at the monthly follow up health coaching sessions with the pharmacist. Pharmacists will check at monthly intervals using an automatic blood pressure monitor. Participants will be encouraged to contact the pharmacy or their doctor if they have any concerns about their health and to call triple 000 in cases of emergency.
Sample Size	30 participants with poorly controlled essential hypertension
Summary of eligibility criteria	**Participants** Key inclusion criteria: • Age/sex: men and women aged > 18 years • Diagnosed with essential hypertension • BP eligibility: systolic and/or diastolic hypertension (≥ 140/90 mmHg) despite compliance with at least one antihypertensive drug • Understands English • Non/ex-smoker Key exclusion criteria: • Age/sex: men and women aged ≤ 18 years • MI, stroke or angina within 6 months • Pregnancy • Current smoker • Secondary hypertension, cardiovascular (CVD) disorders (unstable angina pectoris, heart failure, life-threatening arrhythmia, nephropathy, and grade III-IV retinopathy). • Inability to communicate and comply with all trial requirements • Requiring diuretics, CCB, ACEI or α-blockers for reasons other than essential hypertension • Work/life commitments that may interfere with trial requirement

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	Pharmacists Key Pharmacist inclusion criteria • Is a community pharmacist • Place of employment is within the Melbourne metropolitan area • Has a commitment to the provision of community pharmacy services • Is willing to undergo health coach training • Is committed to the completion of the trial
Maximum duration of trial for each participant	6 months
Recruitment	Participants will be recruited by their community pharmacist has that agreed to take part in this trial.
Consent	Pharmacists will provide written informed consent to the research student. Participants will be asked to provide written informed consent to the Pharmacist.
Pre-Trial training	A health training session will be provided to the community pharmacists before trial commencement. Pharmacists will also receive training on how to recruit and consent participants for the trial.
Baseline Assessment	Eligible subjects will undergo a baseline evaluation of their height, weight and blood pressure (BP). Participants will also be asked questions in order to assess their demographics. A pre trial interview will be conducted by pharmacists re understanding of their medications and adherence to them. Participants will also be asked to complete a questionnaire investigating their adherence to their medications (Adherence to refills and medications scale (ARMS)).
Health Coaching – Session 1	Session 1 will begin with a discussion between the pharmacist and participant. During this discussion the pharmacist and participant will talk about health coaching and essential hypertension in order to determine the participants understanding and in order to educate them further. A pharmacy self care card on high blood pressure will be provided to the participants. Participants will also be asked to determine which stage of change they are at from the stages of change charts. Pharmacists will be

	required to comment on which stage of change they believe the participant are at and why. At the completion of the discussion participants will be questioned by the pharmacist about their BP, how they manage it and how they would like to improve it. These questions utilise the techniques and skills of motivational interviewing (MI). This questioning will assist the participant in setting self-centred goals and the method of attainment by the next session (one month's time). A summary of the goals the participant has set as well as the technique of attainment will be provided to the participant. At the completion of this session pharmacists will be interviewed by the research student. This interview will be structured in order to determine the pharmacist's attitudes and experiences towards health coaching.
Health Coaching – Session 2 (One month post Session 1)	Session 2 will be scheduled one month post session. This session will commence with a discussion about AE's after which BP measurement will be taken. Comparisons between the blood pressure recordings from session 1 will be made. Participants will be asked if they reached their goal and what they did to do so, and if they faced any challenges when doing do. Participants will then be encouraged to set a new goal/s and the method of attainment by the next session (one month's time).
Health Coaching – Session 3 (One month post Session 2)	Session 3 will follow the format of session 2. With comparisons in blood pressure being made between this session and session 2.
End of Trial Assessments (One month post Session 3)	The end of trial assessment will commence as session 2 and 3. At this stage participants will not be guided towards goal setting, but will be advised to continue to

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	practice the skills and techniques they have gained from the previous sessions. As per session 1, participants will also be asked to determine which stage of change they are at from the stages of change chart. A post trial interview will then be conducted by the pharmacist. Participants will be asked the same questions asked at session 1 regarding health coaching and hypertension. Participants will also be asked about the medications they are currently taking for BP and what they are used for. Participants will then complete the medication adherence questionnaire (Adherence to refills and medications scale (ARMS) scale). Participant's weight will also be reordered to make comparisons to readings taken at the beginning of the trial. Participants will also be asked to determine which stage of change they are now at from the stages of change charts. Pharmacists will be required to comment on which stage of change they believe the participant are at and why.
Health coach reflections	At the completion of this session pharmacists will be interviewed by the research student. This interview will be structured in order to determine the pharmacist's attitudes and experiences towards health coaching.
3-month post study follow-up	Participants will receive a follow up by phone call by the research student at 6 months from their first health coaching session.

FULL PROPOSAL –

1. BACKGROUND

Traditionally, health education and counselling was delivered either as written information or provided face-to face; instruction was provided by the pharmacist with a limited exchange of information between the pharmacist and client. Although this may work in a subset of individuals, it can fail to optimise outcomes in others.

Health coaching involves a more client centred and collaborative approach to health care. It is quite an old concept which first arose in 1970's, while the concept of "coaching "within pharmacy/ involving pharmacists" seems to have arisen in the early 2000's (typically 2003). Health coaching is a service that is provided to participants by health care professionals (pharmacists) for the purpose of disease management/ health risk prevention. It involves a collaborative participant -centred interaction between the participant and coach for the purpose of a behavioural change, through the process of goal setting and follow-up. Both the coach and participant are held accountable for the participants outcomes, though it is the role of the coach to provide expert information and facilitate motivation of the participant in order to achieve their goal [1, 2].

Internationally the provision of health coaching through community pharmacy has shown benefits in the health outcomes in participants with chronic conditions [1]. Despite this however, health coaching is a service that is not provided within community pharmacy in Australia. This may be attributed to limited Australian health coaching studies. Another contributing factor could be that most research conducted has not been based on a grounded definition of health coaching as well as the attributes and skill-set required. However, through our preliminary research we have formulated a grounded definition of health coaching and have also identified the desired skills, attributes and attitudes that are required from a health professional in order to health coach. From this we have been able to establish a set of competencies and learning objectives that are integral to our health coach training program.

In 2014/15, approximately 34% of Australians aged 18 years and over had high blood pressure (systolic or diastolic blood pressure is ≥140/90 mmHg or taking medication). Of these, 68% had uncontrolled or unmanaged high blood pressure (not taking medication) [3]. Hypertension is a silent condition, meaning that most are unaware that they have it, which means it can go undiagnosed for some time. Furthermore, when participants are diagnosed they can be reluctant to take their medication as they fail to understand the silent nature of the condition and cannot feel the medication taking effect. This is why we have chosen participants with essential hypertension as the target population for this research project.

2. DEFINING THE RESEARCH

2.1 Research question

What is the impact of an evidence based health coaching program on patients with essential hypertension?"

2.2 Hypothesis

We will be testing the hypothesis that the evidence based health coach training program provided by community pharmacists will 1) reduce systolic and diastolic blood pressure in participants with essential hypertension by 10mmHg (2) improve medication understanding and adherence (3) improve participants weight and health behaviours (e.g. exercise, diet and medication management) (4) will have a positive effect on participant reflections (5) will have a positive effect on the health coach reflections

Ha there is an association with health coaching provided by a community pharmacist and an improvement in blood pressure

Ho- there is no association with health coaching provided a community pharmacist and an improvement in blood pressure

2.3 Objectives:

Project Aims: To use clinical research to:

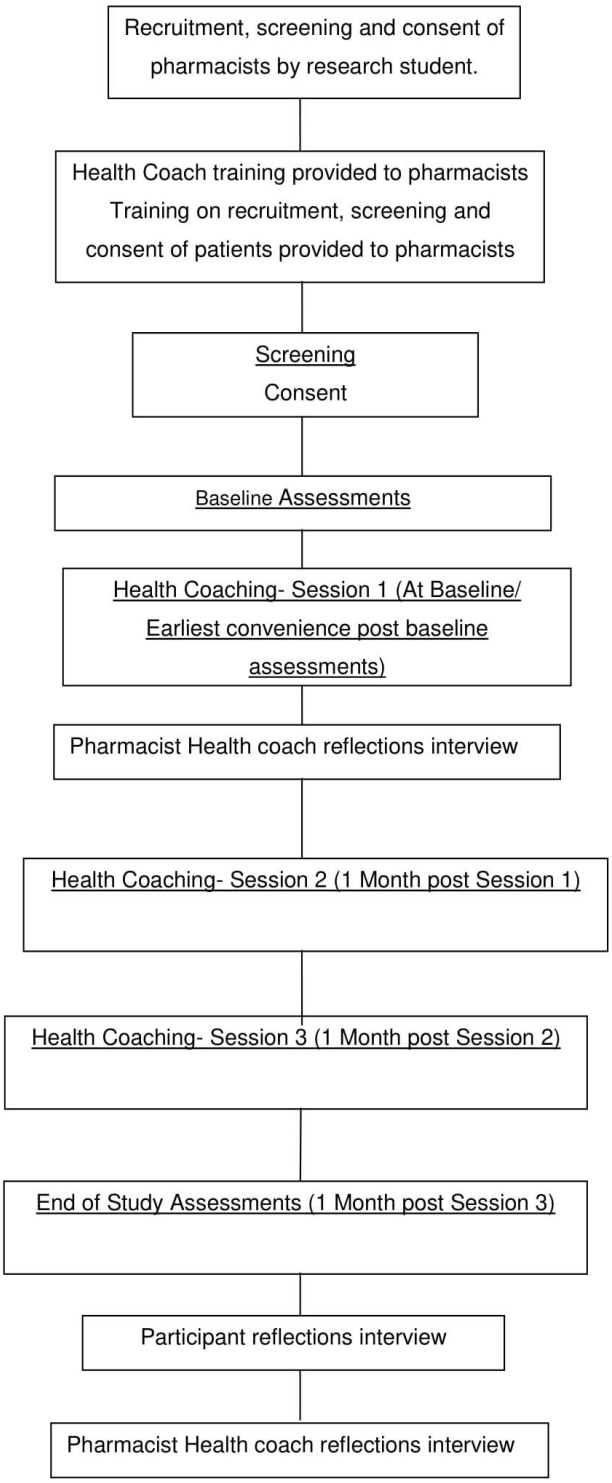
1. Establish an evidence based health coach training program
2. Train community pharmacists to health coach using the evidence based program
3. To investigate the outcomes of evidence based health coaching provided to participants with essential hypertension. These outcomes include the change in:
    a) Participants' systolic and diastolic blood pressure from baseline
    b) Participants' understanding of their medications and adherence to them
    c) Participants' change in weight and health behaviours (e.g. BMI, waist circumference, exercise, eating healthier)
4. To capture patients' and pharmacists' expectations of the outcomes and the process of health coaching
4. To capture patients' and pharmacists' impressions of the coaching process and the successes and downsides of the process

3. TRIAL DESIGN

This trial is a before and after without control trial. This is a 6 month trial in participants with essential hypertension, assessing the outcomes of a health coaching intervention by community pharmacists.

3.1 Trial Flow Chart

Figure 1: Trial flow chart



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3.2 Trial subjects- Recruitment and Consent

3.2.1. Trial population- Pharmacists

The target population will consist of community pharmacies in the metropolitan Melbourne area. These pharmacies should:

- Have a commitment to the provision of community pharmacy services
- Be willing to undergo health coach training
- Be committed to the completion of the trial

The research student will recruit the community pharmacists for the study through direct email invitation and in store visits. The study protocol as well as the PICF will be provided to pharmacists that are interested in participating in the trial.

Pharmacists will be advised to contact the research student if they would like further information about the trial and/or if they would like to participate. The research student will also follow-up the pharmacists that have received the PICF and have not responded in at least two weeks time.

The research student will then consent pharmacists that are willing to participate in the trial and will screen them to ensure that they meet the study inclusion criteria. These pharmacists will then receive the role of investigator as they will be involved in the recruitment, consent and screening of participants for the trial.

The consented pharmacists will then receive health coach training as well as training of the recruitment, consent and screening of participant for the trial.

Pharmacies will be disclosed about other community pharmacies participating in this trial. ***No participant details will be revealed between sites***.

3.2.2 Trial population- Research student

The research student is a community pharmacist, and will also health coach participants as part of the study. If the health coaching is to take place at the research student's place of employment, any health coaching undertaken by the research student will be undertaken outside of their employment hours. This will minimise the risk of confusion to participants as a result of the research students pre-existing relationship.

At times when the research student is providing health coaching they will not undertake any other remunerated conventional pharmacist duties with the participants. The project is separate to paid employment for Harjit Singh.

3.2.3 Trial population- Participants

This is a multi- site trial and recruitment will take place by the community pharmacies taking part in the trial. Recruitment posters will be placed within the participating pharmacies. Up to 30 adults with essential hypertension aged 18 years and older will be recruited.

Patients that have their blood pressure regularly checked at the pharmacy can opt to have the readings documented in electronic pharmacy records. Patients will often request a copy of their records before seeing their GP or for their own records. The pharmacists will approach patients that have been identified as having poorly controlled essential hypertension. Other patients taking antihypertensive could also be approached about the trial. Recruitment posters will also be place in pharmacy to assist with the recruitment of participants for the trial. When approaching potential participants about the trial pharmacists should provide patients with a brief overview of the trial in lay terms and also provide interested patients with a patient PICF to take home and read.

Pharmacists will document on a record sheet provided by research team, the patient name, date approached about study and provided with PICF, and well as the date they followed up with the patient and the date the patient consented. This document will allow pharmacist to keep track of who they have approached about the study and who and when they need to follow up with the patient with regards to participation the trial. Pharmacists should follow-up patients that they provided the PICF to at their next monthly visit to the pharmacy, unless the patient has contacted the pharmacist about consenting sooner. Pharmacists should then in a private consulting area of the pharmacy consent patients to participate in the trial. This will involve going through the PICF with the participant as well as the consent form. You will be required to witness the participant sign the form. These patients will then be screened by the pharmacist to ensure that they meet the inclusion/ exclusion criteria for the trial. Patients that meet study requirements can then receive health coaching at a time negotiated with the pharmacist.

The pharmacist will consent and screen patients. Patients that have consented and screened, but do not meet the inclusion criteria for the study will be excluded from the trial. Pharmacists will need to consent and screen patients until they have at least 10 patients per site that meet the inclusion criteria for the study.

3.3 Inclusion criteria

- Age/sex: men and women aged > 18 years
- BP eligibility: systolic and/or diastolic hypertension (≥ 140/90 mmHg) despite compliance with at least one antihypertensive
- Recognised as having uncontrolled essential hypertension by their pharmacist (in the form of participant/pharmacy records for a period of 3 months)
- Understands English language
- Non/ ex-smoker

3.4 Exclusion criteria

- Age/sex: men and women aged ≤ 18 years
- MI, stroke or angina within 6 months
- Pregnancy
- Current smoker
- Secondary hypertension, cardiovascular (CVD) disorders (unstable angina pectoris, heart failure, life-threatening arrhythmia, nephropathy, and grade III-IV retinopathy).
- Inability to communicate and comply with all trial requirements
- Requiring diuretics, CCB, ACEI or α-blockers for reasons other than essential hypertension
- Work/life commitments that may interfere with trial requirements

NB. Regular medications with minimal effects of blood pressure will be permitted

Since this trial is a paired pre and post intervention trial there is no need to match demographics of participants and pharmacy sites. The trial will focus on the change in the participant pre and post trial as a results of health coaching rather than focusing on between sites differences.

4. Intervention under Investigation

4.1 Name and description of the intervention

The intervention under investigation is evidence based health coaching, established by the research team.

4.2 Intended Purpose

The intended purpose of the intervention is a reduction in systolic and diastolic blood pressure in participants for which the intervention it is provided.

4.3 Method of administration

The evidenced based health coaching will be provided by community pharmacists that have agreed to participate in the trial.

4.4 Required training

Prior to the commencement of the trial, the pharmacists will be trained in evidenced based in health coaching. The health coach training session will run for approximately half a day. The pharmacist will also receive training and guidance on the recruitment, consenting and screening of participant for the trial.

4.5 Precautions

It is unlikely that our intervention could result in any adverse events. Despite this however, participants will be asked if they have experienced any adverse events at each follow-up and the event will be documented. Participants will also be advised that they may contact the pharmacy at any time if they are experiencing any difficulties, in case of a life threatening adverse even participants will be advised to call triple 000.

Pharmacists are in a dependant relationship with the patients that they will recruit for the study. However, by providing potential participants with study information (PICF) to take home and read and approaching patients at their next monthly visit about study participation will ensure that patients do not feel obliged to participate. This also gives them the opportunity to read the study details thoroughly and address and questions or concerns that they may have with the pharmacist.

One of the inclusion criteria for participation in the trial is “understands English” as such even patients whose primary language is other than English can participate without compromising their health or safety.

5. Trial Schedule

5.1 Overview

The trial will be coordinated from RMIT university Bundoora campus, and will be performed at three community pharmacies.

Prior to the commencement of the trial, the pharmacists will be consented and screened by the research student in order to ensure they meet all inclusion criteria. Pharmacists will then be assigned the role of investigator as they will be involved in the recruitment, screening and consenting participants for the trial.

These pharmacists will be trained in the recruitment, screening and consenting of participants by the research student. Pharmacists will also receive health coach training by the research student under the guidance of the Prof Ieva Stupans and Prof Gerard Kennedy.

The training session will run for approximately half a day and will conducted at the community pharmacy in which each of the recruited pharmacists work.

After recruiting, consenting and screening, eligible participants will undergo baseline assessments with their pharmacist after which the first health coaching session with the pharmacist will be scheduled/ commenced.

The trial includes 3 health coaching sessions with the community pharmacist as well as an end of trial visit scheduled at one month post the 3rd health coaching session. There is no specific time frame within which health coaching sessions should be conducted though should take no more than 1 hour. Health coaching sessions will occur in a private consulting area in the community pharmacies.

At the completion of all study visits participants will be provided with a $50 Coles voucher as compensation for their time.

5.2 Table 1 Outline of trial activities

Visit	Description	Start relative to previous activity	duration	Comment
Pre-trial	Pharmacist health coach training session	~ 1 month prior to trial commencement	~ 15 minutes	
Visit 1	Screening -consent	-	~ 15 minutes	
Visit 2	Baseline Assessments	0 days to 1 month	~ 15 minutes	
Visit 3	Health Coaching Session 1	0 days to 1 month	~ 15-30 minutes	Visit 1-3 may coincide with each other
[redacted]	Health Coach reflection interview	Prior to visit 4	~ 15 minutes	
Visit 4	Health Coaching Session 2	1 month	~ 15-30 minutes	
Visit 5	Health Coaching Session 3	1 month	~ 15-30 minutes	
Visit 6	End of Trial Assessments	1 month	~ 15-30 minutes	
[redacted]	Health Coach reflection interview	At end of trial	~ 15 minutes	

5.3 Pre-trial (Pharmacist health coach training session)

This session will occur prior to trial commencement. Community pharmacists that have been approached for the trial and have agreed to participate will be invited for the health coach training session performed by research student under the guidance Prof. Ieva Stupans and Prof. Gerard Kennedy.. This training session will take place at pharmacist's workplace (community pharmacy). This session will also include an overview of the trial as well as its procedures, including the recruitment, consenting and screening of participants as well as record keeping.

5.4 Screening (Visit 1)

Once the subjects have agreed to participate in the trial, they will be invited for the screening visit, when the following activities will be performed by the research team:

• written informed consent

• checking inclusion and exclusion criteria

• Medical and medication history

5.5 Baseline Assessment (Visit 2)

These assessments may be a continuation of Visit 1. Alternatively can be scheduled for 0 days- 1month post the recruitment visit depending on the availability of the participant and pharmacist.

Baseline assessments for all eligible subjects who will have signed informed consent will be performed. These include:

- Height
- Weight
- Waist circumference
- BMI
- BP
- Ethnicity
- Occupation
- Medication history
- Pre trial interview by pharmacists about a participants understanding of their current medications and adherence to them.
    - → Explain each antihypertensive medication and how it works
- Participants must also complete a questionnaire investigating their adherence to their medications (Adherence to refills and medications scale (ARMS) medication adherence scale- appendix 1)

5.6 Health Coaching Session 1 (Visit 3)

This visit should only be commenced when visits 1 and 2 have been completed. This visit may be scheduled at 0-1 month post visits 1 and 2.

The health coaching sessions involve a collaborative discussion between the coach and the participant in order outline participant concerns about their health. This session will involve the following (appendix 3):

- Pharmacist and participant introduction
- Pharmacist will ask the participant to determine which stage of change they are at from the stages of change charts (appendix 2-4)

- Pharmacist will ask the participant *"what do you know about health coaching?"*
- Pharmacist should inform the participant about health coaching
- Pharmacist will ask the participant *"what do you know about hypertension?"*
- Pharmacist will ask the participant *"How do you get hypertension?"*
- Pharmacist will ask the participant *"What does hypertension do to your body?"*
- Pharmacist will ask the participant *"What is the target blood pressure for someone that has hypertension?"*
- Pharmacist will ask the participant to complete stages of change charts for exercise, diet and medication management (see appendix 2-4)
- Pharmacist will ask the participant *"What is your blood pressure?"*
- Pharmacist will ask the participant *"What would you like your blood pressure to be?"*
- Pharmacist will ask the participant *"How does the hypertension affect your life?"*
- Pharmacist will ask the participant *"How do you manage your hypertension?"*
- Pharmacist will ask the participant *"Is there anything you could do to improve this over the next month?"*
- Pharmacist will summarise the goals and plan of attainment that the participant has come up with
- Pharmacist will ask the participant *"Is there anything else that you would like to talk about today?"*
- Pharmacist will advise the participant what to do if they experience any signs of an adverse event: contact the pharmacy or their doctor if they have any concerns about their health and to call triple 000 in cases

The sessions with the participant will follow a semi-structured format. These questions will be provided to the pharmacists in the form of a pro-forma (appendix 5) which will act to guide sessions. Pharmacists should be open to adopting session to suit participant needs and be willing to address other concerns brought up by participants.

5.7 Pharmacist Reflections

The reflections of the pharmacists will be obtained through interview (appendix 9) conducted by the research team at the beginning and at the completion of the health coaching trial. This session will be audio recorded. Pharmacists will be required to provide informed consent. The research team will ask the questions in a semi-structured format, allowing for probing questions when appropriate:

- Were the health coaching sessions difficult to run?
- Did the session take a great deal of time out from the general pharmacy duties?
- How do you feel participants felt about participating in this trial?
- Is there anything that you would change about the program?
- Would you be willing to continue to offer the health coaching program?
- What was the change in BP that your participants experienced?

5.8 Health Coaching Session 2 (Visit 4)

This visit should be scheduled 1 month post visit 3. This session will involve the following (appendix 7):

- Greeting
- Pharmacist will ask the participant "have you experiences and adverse events (AE's)?"

- Pharmacist will check the participant's blood pressure and record it in the participants notes and participants goal setting worksheet
- Pharmacists will compare the participant's current blood pressure reading to the reading of the previous month.
- Pharmacist will ask the participant *"what was the goal you set for yourself at our last session?"*
- Pharmacist will ask the participant *"Did you reach your goal?"*
- Pharmacist will ask the participant *"What challenges did you face along the way?"*
- Pharmacist will ask the participant "*What did you do to reach/ try to reach your goal?"*
- Pharmacist will ask the participant *"What would you like to focus on this session? (Set new goal and how to achieve it)"*
- Pharmacist will ask the participant "*Is there anything else that you would like to discuss today?"*

5.9 Health Coaching Session 3 (Visit 5)

This visit should be scheduled 1 month post visit 4. This session will follow the same format as health coaching session 2 (visit 4- see appendix 6)

5.10 End of Trial Assessments (Visit 6)

This visit should be scheduled 1 month post visit 5. This session will involve the following (appendix 8):

- Greeting
- Pharmacist will ask the participant *"have you experiences and adverse events (AE's)?"*
- Pharmacist will check the participant's blood pressure and record it in the participants notes and participants goal setting worksheet
- Pharmacists will compare the participant's current blood pressure reading to the reading of the previous month
- Pharmacists will record the participants weight and waist circumference
- Pharmacist will ask the participant to determine which stage of change they are at from the stages of change charts (appendix 2-4)
- Pharmacists will conduct a post-trial interview with the participant. The purpose of the interview is to gage the participants understanding of their medical condition, current medications and adherence to them, as well as their attitudes towards the health coaching program
- Participants must also complete a questionnaire investigating their adherence to their medications (Adherence to refills and medications scale (ARMS) medication adherence scale- appendix 1)

Participants will be provided with a $50 Coles voucher as compensation for their time. This voucher will only be available to participants when they complete all study visits.

5.10 End of Trial Pharmacist Reflections

These will follow the same format at the pharmacist reflections interviews conducted at the beginning of the trial (see 5.7)

6 Endpoints

6.1 Primary Endpoint

The primary outcome is the change in a participants' blood pressure from baseline to end of trial as a result of the health coaching in intervention

6.2 Secondary Endpoint

Secondary outcomes include:

- The change in participants' health behaviours
- The change in participants' diet
- The change in participants' physical activity
- The change in participants' understanding of their medications and adherence to them
- The change in participants' BMI
- The change in participants' waist circumference

The project will also analyse:

- participants' reflections and perceptions prior to and at the completion of health coaching
- health coaches' reflections during and at the completion of health coaching

7. Potential Risks and Benefits

7.1 Risks

The potential risks to participant and pharmacist in this trial is considered low. It is unlikely that our health coaching intervention will pose harm to participants as it is non-invasive, as are the trial measurements taken during this trial. However, it is possible that participants and pharmacists may be inconvenienced by the interviews conducted throughout the trial with regards to time, and may initially feel uncomfortable having their responses audio recorded. The risk of being inconvenienced by time is difficult to mitigate it can be managed by ensuring that pharmacists and participants schedule coaching sessions during a time that is convenient to both.

Furthermore, Pharmacists and patients that feel uncomfortable about have their responses audio recorded will be advised that they may turn off the audio recording at anytime if they feel too uncomfortable.

The expected improvement in the participants understanding health condition, their understanding thereof and medication adherence outweighs the potential burdens that participants may experience.
There is a risk that patients may have unreasonable expectations about the outcomes they will receive as a result of participating in the trial. However, the pharmacists will ensure that all participants with hypertension understand that they cannot guarantee or promise any benefits and that despite this they may gain some skills that may assist in the long term management of their health condition.

7.2 Benefits

It is expected that the health coaching session will improve a participants' self management of their essential hypertension by improving their understanding of their chronic health condition and medications. Participants' health behaviours are also expected to improve.

Pharmacists will see an improvement in the quality of life of their participants which we expect will be fulfilling for them. Furthermore, the provision of the health coaching service will contribute to building a strong pharmacist- patient relationship. This could result in a lifelong customer for the pharmacy which could benefit the business in the long run.

8. Methods and Assessments

Data collection for this trial will involve the pharmacists entering the trial information they collect into paper case report forms (CRF).

8.1 Blood pressure

Will be measured using an automatic blood pressure monitor. Blood pressure should be recorded after the participant has been seated for at least 5 minutes. The participant should be seated with their feet flat on the floor, legs uncrossed, upper arm bare and with their back and arm supported. Two recordings will be taken 1 minute apart. The lower of the two recordings will be recorded into the participants CRF.

8.2 Height

Height will be measured in centimetres (cm). Height should be taken on a flat surface. Participants should remove their shoes and stand with their feet together and against the wall. Their legs should be straight and arms at the side and shoulders level.

8.3 Weight

Weight will be recorded in kilograms (Kg). Participants should remove their shoes and any bulky clothing and items from their person.

8.4 BMI

The participants BMI will be calculated from their height and weight measurements.

8.5 Questionnaires and Interviews

8.5.1Participant Reflections and Responses

Participants will be interviewed and coached by pharmacists at baseline (Visit 2) through to the end of trial An audio recording of the participant responses and reflections will be made at visits 2-6. Informed consent will be obtained prior to this and participants will be reminded of this at each visit. The interviews and coaching sessions will be designed to improve a participant's management of their health condition, in addition it will allow researchers to investigate the participants understanding of their health condition and its management and how this changes as a result of health coaching provided by the community pharmacist.

8.5.2 Medication Adherence Questionnaires

Participants will complete a questionnaire to assess their medication adherence prior to and at the completion of the health intervention (appendix 1).This will occur at visits 2 and 6.

8.5.3 Pharmacist Reflections Interviews

Conducted at the beginning and at the completion of the health coaching trial the research team will interview the pharmacists that participated in the health coaching project. The interviews will be audio recorded. Informed consent will be obtained prior to this and pharmacists will be reminded of this at the interview. The interviews will be designed to capture the pharmacist's attitudes and reflections towards health coaching.

9. Data Analysis

9.1 Primary Analysis

The primary analysis will evaluate the change in participants' blood pressure from baseline to end of trial. Analysis of all qualitative data such as blood pressure, weight, waist circumference and BMI will be completed using the SPSS software package.

9.2 Secondary Analysis

Secondary outcomes include: The change in participants: understanding of their medications and adherence to them; the change in participant health behaviours; the change in participant reflections and perceptions prior to and at the completion of health coaching; the change in the health coaches' reflections during and at the completion of health coaching

Most of the data collected for secondary analysis will be in the form of audio recordings. These recordings will be transcribed into a word document using a computer. Transcripts will be analysed using computer – assisted qualitative data analysis (CAQDAS) tools such as NVivo. NVivo is software which allows researchers to categorise and analyse qualitative information into themes and attributes. The analysis of transcripts may also be undertaken manually through identification of recurring themes amongst the transcripts.

9.3 Statistical Methods

The blood pressure readings obtained throughout the trial will be analysed using the paired ANOVA method. The audio recordings taken throughout the trial will be manually transcribed into a word document using a computer. Only the research team will be able to listen to the recordings. Neither the names of the stakeholders nor any other identifying information will be associated with the audio or audio recording or the transcript. All audio recordings will be erased after transcription.

Transcripts will be analysed using computer – assisted qualitative data analysis (CAQDAS) tools such as NVivo. NVivo is software which allows researchers to categorise and analyse qualitative information into themes and attributes. The analysis of transcripts may also be undertaken manually through identification of recurring themes amongst the transcripts.

9.4 Sample Size and Power Calculations

The number of participants required for the trial in order to achieve statistically significant results was determined using the statistical analysis program G* Power. The estimated mean reduction in blood pressure is d=10mmHg and standard deviation of difference is σ_d =15mmHg. Power of the trial (α) is set at 0.05.

The statistical hypothesis is H_0: d=0 vs. H_a: d=10

For α=0.05 and two-sided test the effect size is:

$$es = \frac{|d_1 - d_0|}{\sigma} = \frac{|10-0|}{15} = 0.667$$

Input into G* Power

Sample size= 20

The sample size derived from G*power is 20 participants. We endeavour that at least 20 participants will consent to participate in this trial.

10 Trial materials and products

11.1 Blood pressure monitor

Automated blood pressure monitors will be used during this trial. The brand of machine may differ between pharmacies.

10.2 Scales

Will be required be measure a participants weight at the beginning. The type used will be at the discretion of the pharmacist.

10.3 Measuring tape

A form of measure will be required to measure a participant's height and waist circumference at the beginning of the trial. The type used will be at the discretion of the pharmacist.

10.4 Audio recording device

An audio recording device will be made available to the pharmacies participating in the trial.

11. Case Report Forms

The Case Report Form (CRF) is the printed, document designed to record all the protocol required information to be reported to the research team.

12. Data management

Personal details for each subject taking part in the research trial and linking them to a unique identification number will be held locally on a trial screening log in the Trial Master File at each of the three investigation centres. The audio recordings made during the trial will be kept on a password protected computer. At the completion of the trial all participant records and data will be de-identified. This research data will be retained for a period of 15 years at

13. Trial Management

The research team will ensure that the trial is conducted in accordance in accordance with the protocol approved by the ethics committee. They will monitor the trial through regular visits to the participating community pharmacies.

14 Ethics

14.1 Ethics Committee

Prior to commencement of the trial, the protocol, any amendments, subject information/informed consent form, any other written information will be submitted to the RMIT Human Research Ethics Committee for approval. Written approval will be obtained from the Ethics Committee prior to the commencement of the trial.

14.2 Informed Consent of Trial Participants

Written informed consent will be obtained from all pharmacist and participants' participating in the trial. They will be informed of the trial and the possible risks involved. They will be informed about their right to withdraw from the trial at any time. The signed informed consent forms will be photocopied, originals filed in the participant's notes and a copy given to the subjects.

14.3 Funding

The Coles vouchers used to reimburse participants at the completion of the study have been funded by The School of Health and Biomedical Sciences at RMIT.

15 Timetable

Inclusion of the first subject in the trial is planned to take place after ethics approval and trial completion is expected to be at 6 month post inclusion of the last participant.

16 Retention of Trial Documentation

Research data (interview transcripts and analysis) will be retained on a password-protected electronic file at RMIT University for a period of fifteen years before being destroyed.

17. REFERENCES

[1] H.K. Singh, G.A. Kennedy, I. Stupans, A systematic review of pharmacy health coaching and an evaluation of participant outcomes, Research in Social and Administrative Pharmacy (2018).
[2] J.M. Lonie, Z. Austin, R. Nguyen, I. Gill, C. Tsingos-Lucas, Pharmacist-based health coaching: A new model of pharmacist-participant care, Research in Social and Administrative Pharmacy 13 (2017) 644-652.
[3] Australian Bureau of Statistics, Australian Health Survey 2014/15, 4364.0.55.001 (2014).
[4] J.O. Prochaska, C.C. DiClemente, Stages and processes of self-change of smoking: toward an integrative model of change, Journal of consulting and clinical psychology 51 (1983) 390-5.

Appendix 1

Adherence to refills and medications scale (ARMS)

Survey Items	None	Some	Most	All
1. How often do you forget to take you medicine?	1	2	3	4
2. How often do you decide not to take your medicine?	1	2	3	4
3. How often do you forget to get prescriptions filled?	1	2	3	4
4. How often do you run out of medicine?	1	2	3	4
5. How often do you skip a dose of your medicine before you go to the doctor?	1	2	3	4
6. How often do you miss taking your medicine when you feel better?	1	2	3	4
7. How often do you miss taking your medicine when you feel sick?	1	2	3	4
8. How often do you miss taking your medicine when you are careless?	1	2	3	4
9. How often do you miss taking your medicine?	1	2	3	4
10. How often do you change the dose of your medicine to suit your needs (like when you take more or less pills than you are supposed to)?	1	2	3	4
11. How often do you put off refilling your medicines because they cost too much?	1	2	3	4
12. How often do you plan ahead and refill your medicines before they run out?	1	2	3	4

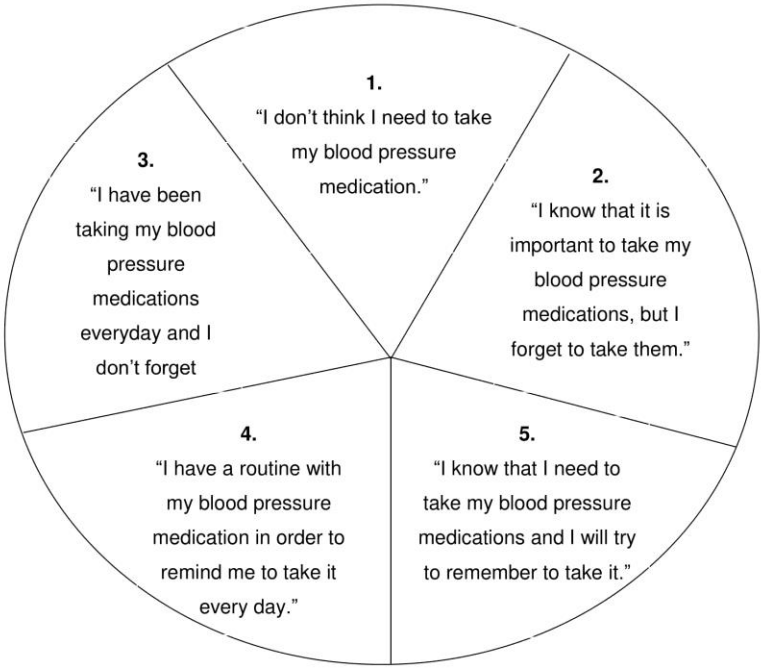
Score: reverse score #12 and sum

28

Appendix 2

Stages of change chart- Medication management

Please mark on the chart the description that best describes you



Pharmacist comments:

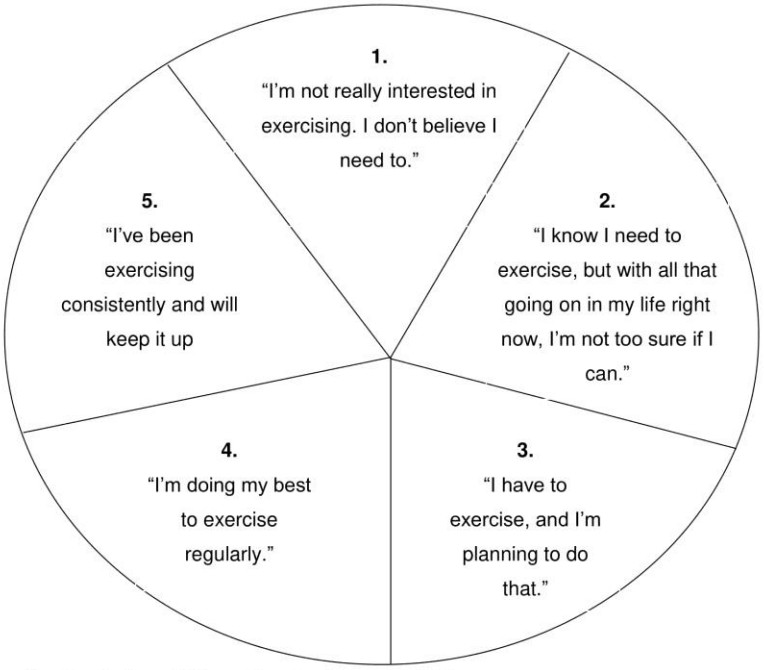
29

Adapted from Prochaska and DiClemente's cycle of change model [4]

Appendix 3

Stages of change chart- Exercise

Please mark on the chart the description that best describes you



Pharmacist comments:

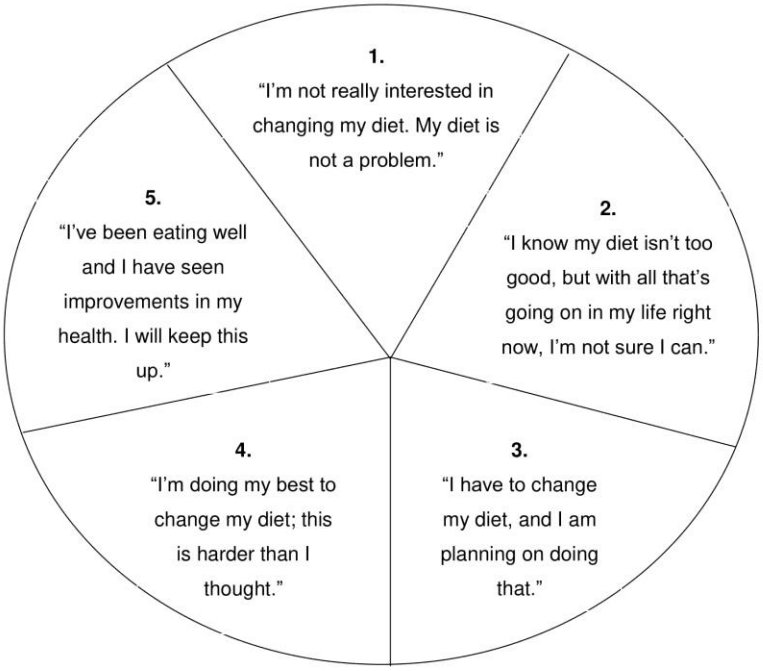
30

Adapted from Prochaska and DiClemente's cycle of change model [4]

Appendix 4

Stages of change chart- Diet

Please mark on the chart the description that best describes you



Pharmacist comments:

31

Adapted from Prochaska and DiClemente's cycle of change model [4]

Appendix 5

Pro-forma for Visit 3 (Health coaching session 1)

Please use this pro-forma as a guide. Sessions should be flexible.

- Introduction/ Greeting
- Make sure participant is comfortable
- Advise participant that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time
- Turn on audio recorder
- Questions to ask the participant:
    - What do you know about health coaching?
        - → Inform the participant about health coaching
    - What do you know about hypertension?
    - How do you get hypertension?
    - What does hypertension do to your body?
    - What is the target blood pressure for someone that has hypertension?
        - → Educate participant about hypertension and provide self care card on high blood pressure
    - Ask participant to complete stages of change charts for exercise, diet and medication management (see appendix 2-4)
    - Do you know what your blood pressure is at the moment?
    - What would you like your blood pressure to be?
    - How does the hypertension affect your life?
    - How do you manage your hypertension?
    - Is there anything you could do to improve this over the next month?
        - → Write down goals and plan on the goal setting worksheet for this visit
    - Summarise the participants goals and plan of attainment
        - → provide participant with summary (photocopy worksheet for this visit)
    - Is there anything else that you would like to talk about today?
    - Advise participant what to do if they experience any signs of an adverse event:
        - → Contact the pharmacy or their doctor if they have any concerns about their health and to call triple 000 in cases of emergency.

Appendix 6

Personal Goal Setting Plan for visits 3, 4 & 5 *Please provide a copy of this for the participant after these visits*

My blood pressure last month was: **_____ /_____mmHg**	**My current blood pressure is:** **_____ /_____mmHg**	**My personal blood pressure goal for this month is:** **_____ /_____mmHg**

My personal action plan for this month

I will work towards improving my blood pressure by changing my:

1. Diet

   _____
   _____
   _____

2. Exercise

   _____
   _____
   _____

3. Medication Management

   _____
   _____
   _____

How confident are you that you can reach your goal? *(participant to complete)*

☹ ☺ ☺

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
	Totally unconvinced		Unsure		Somewhat convinced				Extremely Convinced	

My next visit is on: _____at _____PM/AM

Appendix 7

Pro-forma for Health coaching session 2 and 3 (Visit 4 & 5)

Please use this pro-forma as a guide. Sessions should be flexible.

- Introduction/ Greeting
- Make sure participant is comfortable
- Advise participant that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time
- Turn on audio recorder
- Questions to ask the participant:
- Have you experiences and adverse events (AE's)?
- Can I check your blood pressure (BP)?
  - → Check and record the BP in the participants notes and participants goal setting worksheet
  - → Compare this BP reading with the previous month and discuss with participant
- What were the goals you set for yourself at our last session?"
  - Remind if necessary
- Did you reach your goals?

Yes	No
You should be proud of the hard work that you have put into achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set new goals for the next month what would it be?	Looks like you tried very hard and were close to achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set new goals for the next month what would it be?

- How will you reach this goal
  - → Write down goals and plan on the goal setting worksheet for this visit
  - → Summarise the participants goals and plan of attainment
  - → Provide participant with summary (photocopy worksheet for this visit)
- Is there anything else that you would like to talk about today?
- Advise participant what to do if they experience any signs of an adverse event:
  - Contact the pharmacy or doctor if they have any concerns about their health and to call triple 000 in cases of emergency.

Appendix 8

Pro-forma for End of Trial (Visit 6)

- Introduction/ Greeting
- Make sure participant is comfortable
- Advise participant that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time
- Turn on audio recorder
- Questions to ask the participant:
- Have you experienced any adverse events (AE's)?
- Can I check your blood pressure (BP)?
  - → Check and record the BP in the participants notes and participants goal setting worksheet
  - → Compare this BP reading with the previous month and discuss with participant
- Can I check your weight and waist circumference?
  - → Compare to beginning of trial
- What were the goals you set for yourself at our last session?
  - → Remind if necessary
- Did you reach your goal?

Yes	No
You should be proud of the hard work that you have put into achieving your goals ↓ What challenges did you face along the way ↓ I hope that the skills you have learnt will help you keep track of your BP	Looks like you tried very hard and were close to achieving your goals ↓ What challenges did you face along the way ↓ Keep it up! ↓ I hope that the skills you have learnt will help you keep track of your BP

- Before we finish off this trial I would like to ask you some of the questions I asked you at the beginning of the trial, it that okay?
  - Pharmacist will ask the participant to determine which stage of change they are at from the stages of change charts
  - Provide medication adherence questionnaire
  - Ask the participant the following questions:
    - What do you know about hypertension?
    - How do you get hypertension?
    - What does hypertension do to your body?
    - What is the target blood pressure for someone that has hypertension?
    - How do you manage your hypertension?
    - How did you feel about the health coaching sessions?

- Do you think that this is a service that pharmacies should offer?
- Is there anything else that you would like to talk about?

- Parting phrase

Appendix 9

Pharmacist reflection interview questions (post health coaching session 1 and end of trial)

- Introduction/ Greeting
- Make sure pharmacist comfortable
- Advise pharmacist that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time
- Turn on audio recorder
- Questions to ask the pharmacist:
    - Were the health coaching sessions difficult to run?
    - Did the sessions take a great deal of time out from the general pharmacy duties?
    - How do you feel participants felt about participating in this trial?
    - Is there anything that you would change about the program?
    - Would you be willing to continue to offer the health coaching program?
    - What was the change in BP that your participants experienced?
    - Is there anything you would like to add?
- Closing phrase

Appendix 10

Pro-forma for 3 month post study follow-up

- Introduction/ Greeting
- Advise participant that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time
- Turn on audio recorder
- Questions to ask the participant:
  - Have you experiences and adverse events (AE's)?
  - How are you managing your blood pressure since the completion of the health coaching sessions?
  - How often do you check your blood pressure?
  - What's your diet and physical activity regimen like?
  - Some people can sometimes forget to take their medications, how do you remember to take yours?
  - Would you like to take part in a health coaching program again, if it was offered to you?
  - Is there anything else that you would like to talk about?
- Closing phrase

Appendix 11. Case Report Forms for Pilot Pharmacist Health Coaching Trial

Visit 1

SCREENING

Date: ____ /____ /____

1. **Participant Initials: _____**
2. **Year of Birth:_____**
3. **Age:_____**
4. **Would you like us to inform your doctor about your progress throughout the study?**

   No ☐

   Yes ☐ (If yes) Doctor Contact Details

   Name: _____

   Address: _____

   _____
5. **Current Medications**

Medication	Used for

6. Inclusion Criteria

All items must be marked 'Yes' for the participant to be eligible.

	No	Yes
Aged >18 years	☐	☐
Systolic and/or diastolic hypertension (≥ 140/90 mmHg) despite compliance with at least one antihypertensive	☐	☐
Recognised as having uncontrolled hypertension by the pharmacist (in the form of participant/pharmacy records for a period of 3 months)	☐	☐
Understands English language	☐	☐
Non/ Ex-smoker	☐	☐

7. Exclusion criteria

All items must be marked 'No' for the participant to be eligible.

	No	Yes
Aged ≤18 years	☐	☐
Has experiences Myocardial Infarction, stroke, angina attack within the previous 6 months	☐	☐
Is pregnant	☐	☐
Current Smoker	☐	☐
Secondary hypertension, cardiovascular (CVD) disorders (unstable angina pectoris, heart failure, life-threatening arrhythmia, nephropathy, and grade III-IV retinopathy)	☐	☐
Inability to communicate and comply with all study requirements	☐	☐
Requires diuretics, CCB, ACEI or α-blockers for reasons other than hypertension	☐	☐
Has work/life commitments that may interfere with study requirements	☐	☐

8. Does the participant meet the eligibility criteria YES ☐ NO ☐ (exclude from study)

9. Has the participant signed the participant informed consent forms (PICF)? YES ☐ No ☐

Visit 2

BASELINE ASSESSMENTS

Date: ____ /____ /____

1. **Number code assigned**_____
2. **Gender:** FEMALE ☐ MALE ☐
3. **Allergies:**_____

4. **Ethnicity**_____
5. **Occupation**_____
6. **Blood Pressure: [Participants should be relaxed and seated for five minutes prior to readings]**

   a. **Reading #1:** Systolic _____ mmHg Diastolic_____ mmHg

   Wait 1 minute

   b. **Reading #2** Systolic _____ mmHg Diastolic_____ mmHg

Lowest reading Systolic _____ mmHg Diastolic_____ mmHg

7. **Height:** _____ cm
8. **Weight:** _____ kg
9. **BMI= weight (kg)/ height^2 (m^2)** _____
10. **Waist circumference:**_____ cm

Advise participant that now you would like to turn on a the audio recorder. Please inform participants that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time. Also advise participants that you may also take notes during this time.

11. Current Medications to control blood pressure:

1.	**2.**
3.	**4.**
5.	**6.**

7. a. What do you use each of the medications for?

b. How do they work?

1a	**b**
2a	**b**
3a	**b**
4a	**b**
5a	**b**

6a	b

8. **Some people often forget to take their medicines. How do you remember to take yours?**

    a. *Please explain the role of each antihypertensive medication to the participant.*

9. **Provide medication adherence questionnaire [advise participants that there are no right or wrong answer]**

Adherence to refills and medication scale (ARMS)

Survey Items	None	Some	Most	All
1. How often do you forget to take you medicine?	1	2	3	4
2. How often do you decide not to take your medicine?	1	2	3	4
3. How often do you forget to get prescriptions filled?	1	2	3	4
4. How often do you run out of medicine?	1	2	3	4
5. How often do you skip a dose of your medicine before you go to the doctor?	1	2	3	4
6. How often do you miss taking your medicine when you feel better?	1	2	3	4
7. How often do you miss taking your medicine when you feel sick?	1	2	3	4
8. How often do you miss taking your medicine when you are careless?	1	2	3	4
9. How often do you miss taking your medicine?	1	2	3	4
10. How often do you change the dose of your medicine to suit your needs (like when you take more or less pills than you are supposed to)?	1	2	3	4
11. How often do you put off refilling you medicines because they cost too much?	1	2	3	4
12. How often do you plan ahead and refill your medicines before they run out?	1	2	3	4

Visit 3

HEALTH COACHING SESSION 1

Date: ____ /____ /____

Introduction/ Greeting ☐

Advise participant that now you would like to turn on a the audio recorder. Please inform participants that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time. Also advise participants that you may also take notes during this time.

Questions to ask the participant:

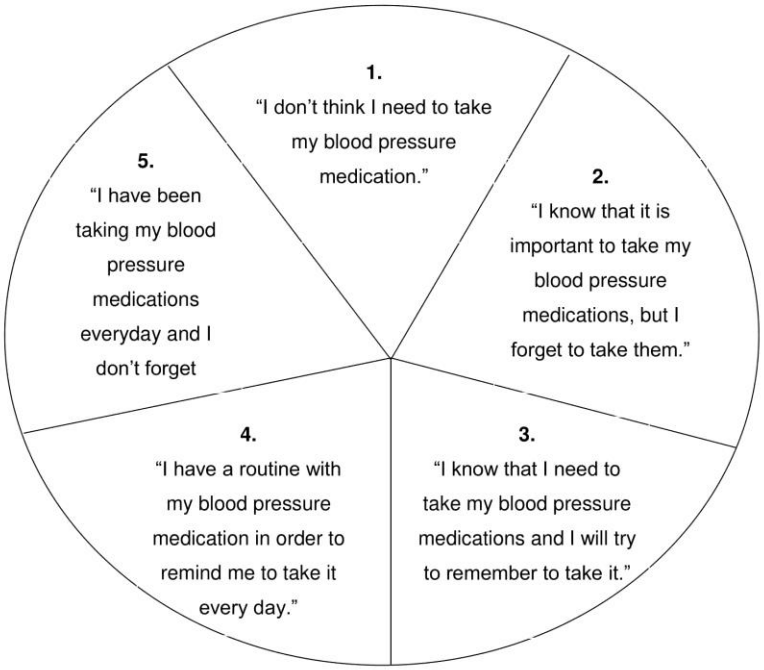
1. Where do you think you are in terms of your blood pressure management?
    a. Refer to stages of change charts (exercise diet and medication management) and ask participant to mark where they lie (see next page) ☐
2. What do you know about health coaching? ☐
    a) *Inform the participant about health coaching* ☐
3. What do you know about high blood pressure? ☐
4. How do you get high blood pressure? ☐
5. What does it do to your body? ☐
6. What is the target blood pressure for someone that has hypertension? ☐
    a) Educate participant about hypertension and provide pharmacy care card on high blood pressure to participant ☐
7. What is your blood pressure? ☐
8. What would you like your blood pressure to be? ☐
9. How does you high blood pressure affect your life? ☐
10. How do you manage your high blood pressure? ☐
11. What could you do to improve this over the next month? ☐
    a) Write down goals and plan on the goal setting worksheet for this visit ☐
12. Summarise the participants goals and plan of attainment ☐
    a) Provide participant with summary (photocopy worksheet for this visit) ☐
13. Is there anything else that you would like to talk about today? ☐

14. Advise participant what to do if they experience any signs of an adverse event: ☐

    a) ***Contact the pharmacy or their doctor if they have any concerns about their health and to call triple 000 in cases of emergency.*** ☐

Visit 3
Stages of change chart- Medication management

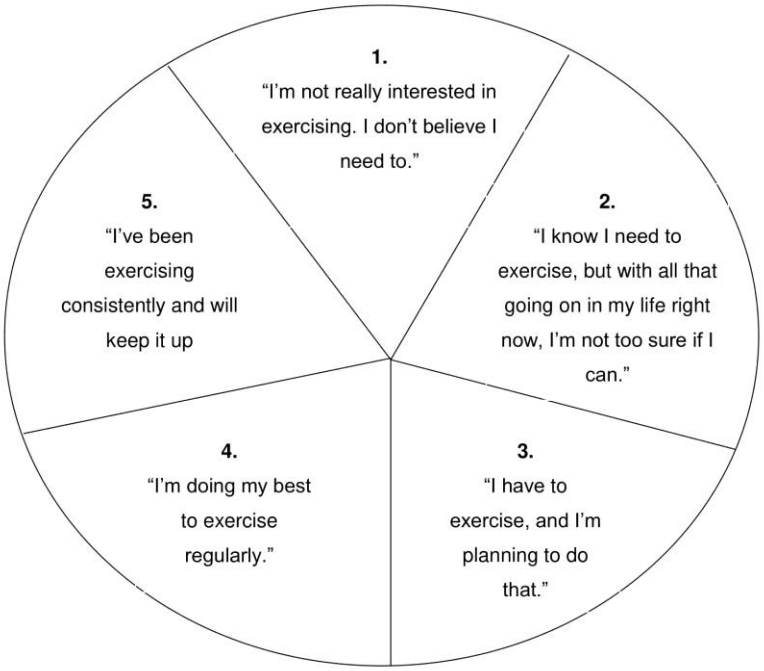
Please mark on the chart the description that best describes you



Pharmacist comments:

Visit 3
Stages of change chart- Exercise

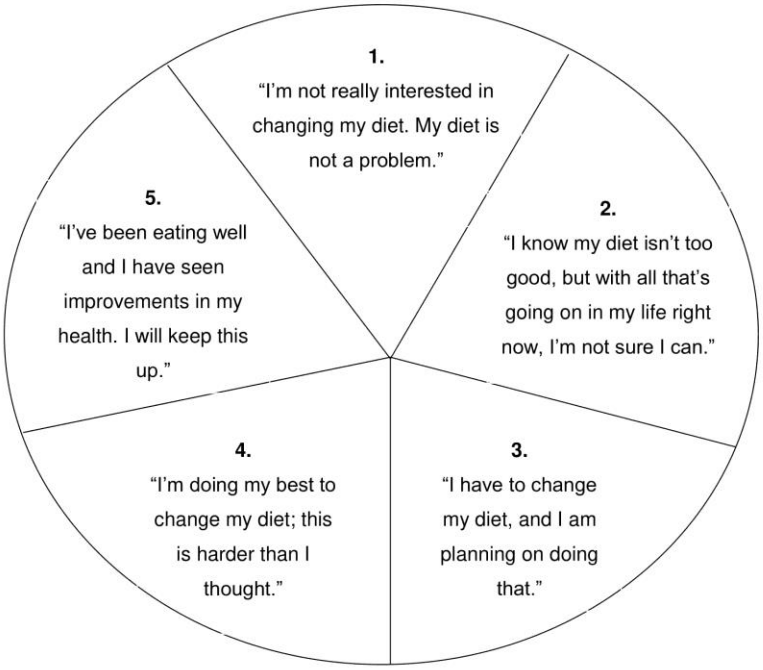
Please mark on the chart the description that best describes you



Pharmacist comments:

Visit 3
Stages of change chart- Diet

Please mark on the chart the description that best describes you



Pharmacist comments:

Stages of change charts

Pharmacists please comment in the sections provided on each cart:

- **Which stage of do you believe the participant is at?**

  1. Pre-contemplation, 2. Contemplation, 3. Preparation, 4. Action, 5. Maintenance

- **Why do you believe the participant is at this stage?(please explain)**

Goal Setting Pro-forma for Visit 3 (Health coaching session 1)

Please provide a copy of this to the participant

My blood pressure last month was: **_____ /_____mmHg**	**My current blood pressure is:** **_____ /_____mmHg**	**My personal blood pressure goal for this month is:** **_____ /_____mmHg**

My personal action plan for this month

I will work towards improving my blood pressure by changing my:

1. Diet

   _____
   _____
   _____

2. Exercise

   _____
   _____
   _____

3. Medication Management

   _____
   _____
   _____

How confident are you that you can reach your goal? *(participant to complete)*

☹ 😐 ☺

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
	Totally unconvinced		Unsure		Somewhat convinced				Extremely convinced	

My next visit is on: _____at _____PM/AM

Visit 4

HEALTH COACHING SESSION 2

Date: ____ /____ /____

Introduction/ Greeting ☐

Advise participant that now you would like to turn on a the audio recorder. Please inform participants that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time. Also advise participants that you may also take notes during this time.

Questions to ask the participant:

1. Have you experiences and adverse events (AE's)? ***Record on next page*** ☐
2. Can I check your blood pressure (BP)? ***Record on next page*** ☐
    a. Check and record the BP it in the participants notes and participants goal setting worksheet ☐
    b. Compare this BP reading with the previous month and discuss with participant ☐
3. What was the goal you set for yourself at our last session?
    a. Remind if necessary ☐
4. Did you reach your goal?

Yes ☐	No ☐
You should be proud of the hard work that you have put into achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set new goals for the next month what would it be?	Looks like you tried very hard and were close to achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set new goals for the next month what would it be?

5. How will you reach these goals

a. Write down goals and plan on the goal setting worksheet for this visit ☐

b. Summarise the participants goals and plan of attainment ☐

c. Provide participant with summary (photocopy worksheet for this visit) ☐

6. Is there anything else that you would like to talk about today? ☐

7. Advise participant what to do if they experience any signs of an adverse event: ☐

   a. ***Contact the pharmacy or doctor if they have any concerns about their health and to call triple 000 in cases of emergency***.

BLOOD PRESSURE (Visit 4)

Blood Pressure: [Participants should be relaxed and seated for five minutes prior to readings]

a. **Reading #1:** Systolic _____ mmHg Diastolic_____ mmHg

Wait 1 minute

b. **Reading #2** Systolic _____ mmHg Diastolic_____ mmHg

Lowest reading Systolic _____ mmHg Diastolic_____ mmHg

Goal Setting Pro-forma for Visit 4 (Health coaching session 2)

Please provide a copy of this for the participant

My blood pressure last month was: **_____/_____mmHg**	**My current blood pressure is:** **_____** **/_____mmHg**	**My personal blood pressure goal for this month is:** **_____** **/_____mmHg**

My personal action plan for this month

I will work towards improving my blood pressure by changing my:

1. Diet

   _____
   _____
   _____

2. Exercise

   _____
   _____
   _____

3. Medication Management

   _____
   _____
   _____

How confident are you that you can reach your goal? *(participant to complete)*

☹ 😐 ☺

0	1	2	3	4	5	6	7	8	9	10
	Totally unconvinced		Unsure		Somewhat convinced				Extremely convinced	

My next visit is on: _____at _____PM/AM

Visit 5

HEALTH COACHING SESSION 3

Date: ____ / ____ /____

Introduction/ Greeting ☐

Advise participant that now you would like to turn on a the audio recorder. Please inform participants that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time. Also advise participants that you may also take notes during this time.

Questions to ask the participant:

8. Have you experiences and adverse events (AE's)? ***Record on next page*** ☐
9. Can I check your blood pressure (BP)? ***Record on next page*** ☐
    a. Check and record the BP it in the participants notes and participants goal setting worksheet ☐
    b. Compare this BP reading with the previous month and discuss with participant ☐
10. What was the goal you set for yourself at our last session?
    a. Remind if necessary ☐
11. Did you reach your goal?

Yes ☐	No ☐
You should be proud of the hard work that you have put into achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set new goals for the next month what would it be?	Looks like you tried very hard and were close to achieving your goals ↓ Do you think that the goals you set for yourself were too ambitious, too cautious or just right ↓ When you think about the goals you set yourself, how does it make you feel? ↓ If you were to set a new goals for the next month what would it be?

12. How will you reach these goal

    d. Write down goals and plan on the goal setting worksheet for this visit ☐

    e. Summarise the participants goals and plan of attainment ☐

    f. Provide participant with summary (photocopy worksheet for this visit) ☐

13. Is there anything else that you would like to talk about today? ☐

14. Advise participant what to do if they experience any signs of an adverse event: ☐

    b. ***Contact the pharmacy or doctor if they have any concerns about their health and to call triple 000 in cases of emergency***.

BLOOD PRESSURE (Visit 5)

Blood Pressure: [Participants should be relaxed and seated for five minutes prior to readings]

c. **Reading #1:** Systolic _____ mmHg Diastolic_____ mmHg

Wait 1 minute

d. **Reading #2** Systolic _____ mmHg Diastolic_____ mmHg

Lowest reading Systolic _____ mmHg Diastolic_____ mmHg

Goal Setting Pro-forma for Visit 5 (Health coaching session 3)

Please provide a copy of this for the participant

My blood pressure last month was: **_____/_____mmHg**	**My current blood pressure is:** **_____** **/_____mmHg**	**My personal blood pressure goal for this month is:** **_____** **/_____mmHg**

My personal action plan for this month

I will work towards improving my blood pressure by changing my:

1. Diet

   _____
   _____
   _____

2. Exercise

   _____
   _____
   _____

3. Medication Management

   _____
   _____
   _____

How confident are you that you can reach your goal? *(participant to complete)*

☹ 😐 ☺

0	1	2	3	4	5	6	7	8	9	10
	Totally unconvinced		Unsure		Somewhat convinced				Extremely convinced	

My next visit is on: _____at _____PM/AM

Visit 6

END OF STUDY

Date: ____ / ____ /____

Introduction/ Greeting ☐

Advise participant that now you would like to turn on a the audio recorder. Please inform participants that they have agreed to have these sessions audio recorded and that they can switch off the recording at any time. Also advise participants that you may also take notes during this time.

Questions to ask the participant:

1. Have you experiences and adverse events (AE's)? ***Record on next page*** ☐
2. Can I check your blood pressure (BP)? ***Record on next page*** ☐
   a. Check and record the BP it in the participants notes and participants goal setting worksheet ☐
   b. Compare this BP reading with the previous month and discuss with participant ☐
3. Can I check your weight and waist circumference? ☐
   a. Compare to beginning of study ☐
4. What was the goal you set for yourself at our last session? ☐
   a. Remind if necessary ☐
5. Did you reach your goal? ☐

Yes ☐	No ☐
You should be proud of the hard work that you have put into achieving your goals ↓ What challenges did you face along the way ↓ I hope that the skills you have learnt will help you keep track of your BP	Looks like you tried very hard and were close to achieving your goal ↓ What challenges did you face along the way ↓ Keep it up! ↓ I hope that the skills you have learnt will help you keep track of your BP

6. Ask the participant to determine which stage of change they are at from the stages of change chart s ***(see following pages)***
7. Provide medication adherence questionnaire [advise participants that there are no right or wrong answer ***(see following page)***
8. Before we finish off this study I would like to ask you some of the questions I asked you at the beginning of the study, it that okay?
    a. What do you know about hypertension? ☐
    b. How do you get hypertension? ☐
    c. What does hypertension do to your body? ☐
    d. What is the target blood pressure for someone that has hypertension? ☐
    e. How do you manage your hypertension? ☐
    f. How did you feel about the health coaching sessions? ☐
    g. Do you think that this is a service that pharmacies should offer? ☐
    h. Is there anything else that you would like to talk about? ☐

Parting phrase

-End of Study-

BLOOD PRESSURE (Visit 6)

Blood Pressure: [Participants should be relaxed and seated for five minutes prior to readings]

a. **Reading #1:** Systolic _____ mmHg Diastolic_____ mmHg

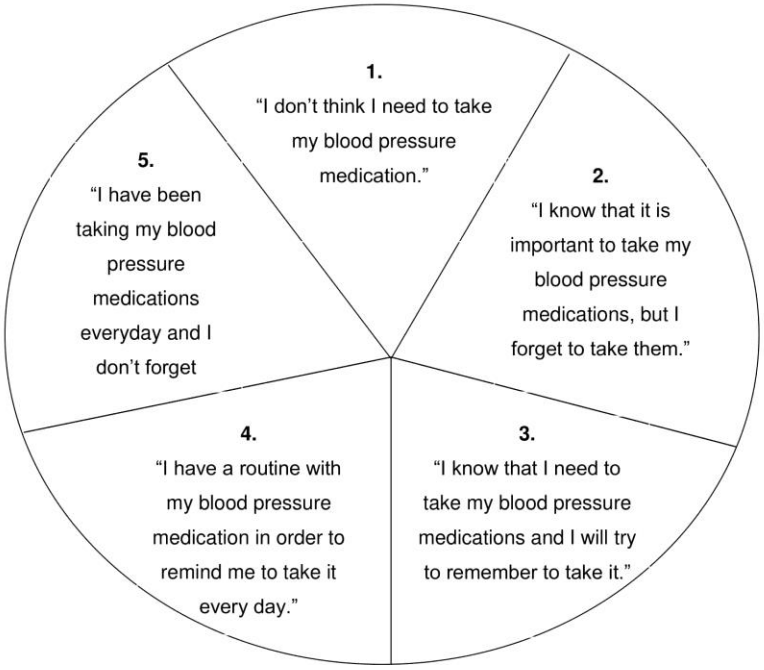
Wait 1 minute

b. **Reading #2** Systolic _____ mmHg Diastolic_____ mmHg

Lowest reading Systolic _____ mmHg Diastolic_____ mmHg

Visit 6
Stages of change chart- Medication management

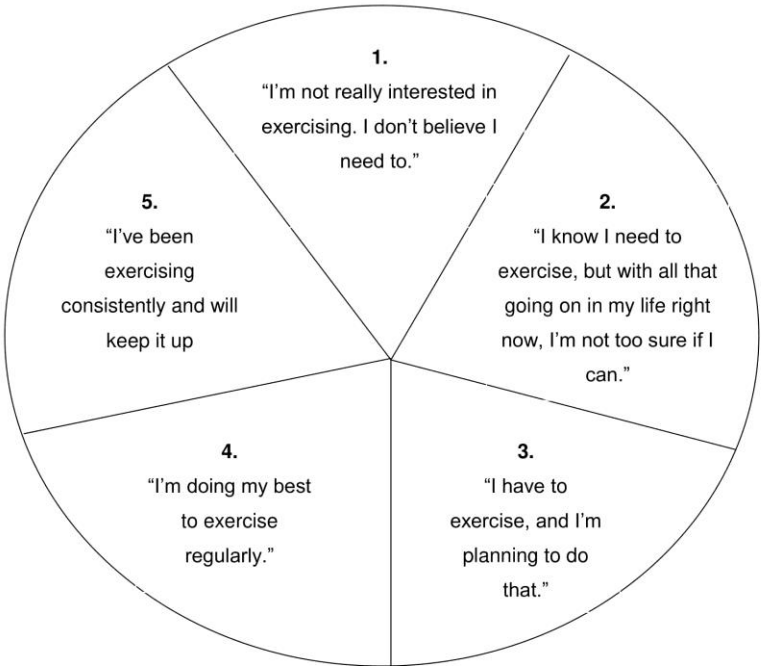
Please mark on the chart the description that best describes you



Pharmacist comments:

Visit 6
Stages of change chart- Exercise

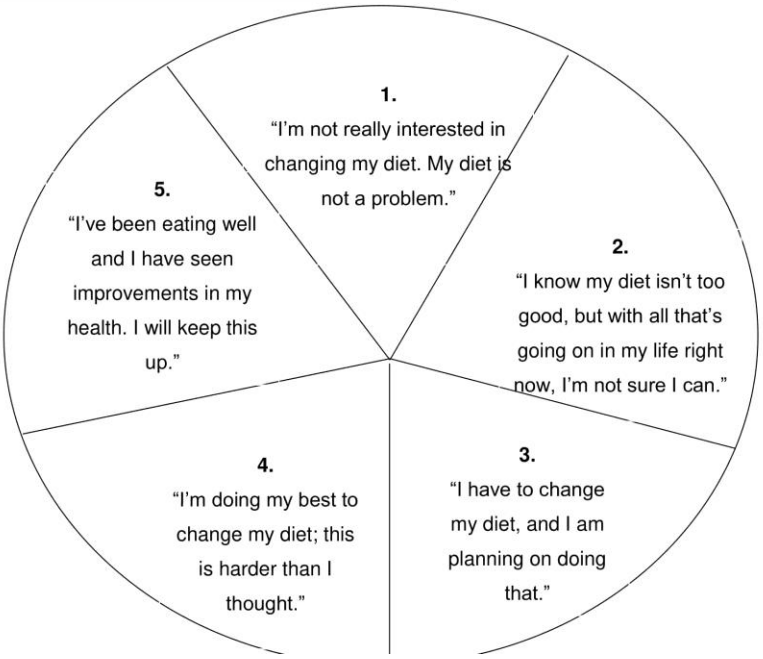
Please mark on the chart the description that best describes you



Pharmacist comments:

Visit 6
Stages of change chart- Diet

Please mark on the chart the description that best describes you



Pharmacist comments:

Stages of change charts

Pharmacists please comment in the sections provided on each cart:

- **Which stage of do you believe the participant is at?**

  1. Pre-contemplation, 2. Contemplation, 3. Preparation, 4. Action, 5. Maintenance

- **Why do you believe the participant is at this stage?(please explain)**

Adherence to refills and medications scale (ARMS)

Survey Items	None	Some	Most	All
1. How often do you forget to take you medicine?	1	2	3	4
2. How often do you decide not to take your medicine?	1	2	3	4
3. How often do you forget to get prescriptions filled?	1	2	3	4
4. How often do you run out of medicine?	1	2	3	4
5. How often do you skip a dose of you medicine before you go to the doctor?	1	2	3	4
6. How often do you miss taking your medicine when you feel better?	1	2	3	4
7. How often do you miss taking your medicine when you feel sick?	1	2	3	4
8. How often do you miss taking your medicine when you are careless?	1	2	3	4
9. How often do you miss taking you medicine to	1	2	3	4
10. How often do you change the dose of your medicine to suit your needs (like when you take more or less pills than you are supposed to)?	1	2	3	4
11. How often do you put off refilling you medicines because they cost too much?	1	2	3	4
12. How often do you plan ahead and refill your medicines before they run out?	1	2	3	4

Trial Participation Outcome		
Completed trial	YES ☐	NO ☐
Withdrawal from trial (complete withdrawal from below)	YES ☐	NO ☐

Trial Withdrawal Form **Date of trial withdrawal ____ / ____ /____**

Reason for withdrawal:

Lost to follow up ☐

Non-compliance ☐

Concomitant medication ☐

Medical contraindication ☐

Adverse event (explain) ☐

_____

Other (explain) ☐

_____

Appendix 12. Recruitment poster for Pilot Pharmacist Health Coaching Trial

ARE YOU INTERESTED IN A FREE PROGRAM TO HELP MANAGE YOUR BLOOD PRESSURE?

If you've answered yes, you may be qualified to take part in our community pharmacy health coaching study.

We believe that sometimes it can be difficult to manage your blood pressure and that it can be more difficult when people TELL you what your blood pressure SHOULD be without asking YOU what YOU want it to be.

During this study your community pharmacist will help you manage YOUR blood pressure the way YOU want.

This study aims to investigate the change in your blood pressure and health behaviours as a result of health coaching provided by the pharmacist and

Who? - Adults who are non-smokers and aged 18 or over with a history of poorly controlled hypertension

When?-Arrange a meeting at your convenience with your pharmacist

Where? - At Fullife Pharmacy

What? - You will undertake 3 health coaching sessions with your pharmacist over a period of 6 months. The pharmacist will help you keep track of your diet, exercise and medications in order to help you better manage your blood pressure. Your opinions and attitudes towards the service will also be recorded

If you are interested in participating in the study and would like more information, please speak to our pharmacist's Tim Shanks and Lara Gliana

RMIT UNIVERSITY

fullife pharmacies

Appendix 13. Outline for Training Pharmacists to Health Coach

Training for Community Pharmacists

Training Outline

Training on recruiting, consenting and screening patients:

Recruitment:

- Place study recruitment posters in pharmacy
- Approach patients that have poorly controlled hypertension as per pharmacy records
    - Provide with brief overview of study
    - Provide PICF for patient to take home
    - Advise that you will follow up with them at their next monthly visit to the pharmacy
- Approach patients that present with scripts for antihypertensive medications
    - Provide with brief overview of study
    - Provide PICF for patient to take home
    - Advise that you will follow up with them at their next monthly visit to the pharmacy

Consent:

- Follow-up with patients that you provided PICF's to at their next monthly visit
    - Take patient to private consulting area
        - Address any questions or concerns that patients may have about the trial
        - Ask if they would like to participate in the trial
        - Go through the consent form with the patient
        - Witness patient sign the consent form

Screening:

- Follow through and complete the case report for screening (visit 1) with the consented patient
- For patients that do not meet the inclusion criteria → exclude
- For patients that meet all inclusion criteria→ include
- Continue to recruit and screen patients until you have at least 10 participants that meet the inclusion criteria and would like to receive health coaching at your pharmacy

Health coach training:

- What is health coaching
- Importance of health coaching
- Fundamental principles (underlying theories and models of behaviour change)
    - Motivational Interviewing
    - Stages of change
- The barriers to patients changing health behaviours
- How to health coach
    - How to build coaching relationship with patients
    - Goal setting process in health coaching
    - Recording and monitoring patients during and after health coaching sessions
    - Role playing to practice health coaching techniques
    - Run through study protocol and material

NOTE:

All pharmacists will also be provided with an overview of the study. The research student will also go through each of the study documents with the pharmacist to ensure that they understand when and how to use each document.

Pharmacists will be advised that there are proformas for each health coaching visit in order to guide them.

Appendix 14. Pharmacist Health Coach- Participant Information Consent Form (PICF)

RMIT UNIVERSITY

Participant Information Sheet/Consent Form

Interventional Study - *Adult providing own consent* ***(Pharmacist)***

RMIT University

Title	A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension
Short Title	Health coaching in community pharmacy
Protocol Number	1.0
Project Sponsor	
Coordinating Principal Investigator/ Principal Investigator	Ieva Stupans
Associate Investigator(s)	Gerard Kennedy Harjit K Singh (research student)
Location	RMIT

Part 1 What does my participation involve?

1 Introduction

You are invited to take part in this research project, **A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension.** This is because you are a community pharmacist The research project is aiming to evaluate the outcomes of health coaching in patients with poorly controlled essential hypertension.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the tests and research involved. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend or local doctor.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:
- Understand what you have read
- Consent to take part in the research project
- Consent to the tests and research that are described

You will be given a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

Traditionally, health education and counselling was delivered either as written information or provided face-to face; in the interaction the instruction was provided by the pharmacist with a limited exchange of information between the pharmacist and client. Although this may work in a subset of individuals, it can fail to produce outcomes in others.

Health coaching involves a more client centred and collaborative approach to health care. It is a service that is provided to participants by health care professionals (pharmacists) for the purpose of disease management/ health risk prevention. It involves a collaborative patient centred interaction between the patient and coach for the purpose of a behavioural change, through the process of goal setting and follow-up. Both the coach and patient are held accountable for the participants outcomes, though it is the role of the coach to provide expert information and facilitate motivation of the participant in order to achieve their goal.

Internationally the provision of health coaching through community pharmacy has shown benefits in health outcomes in patients with chronic health conditions. Despite this however, health coaching is a service that is not provided within community pharmacy in Australia. This may be attributed to limited Australian health coaching studies.

In 2014/15, approximately 34% of Australians aged 18 years and over had high blood pressure (systolic or diastolic blood pressure is ≥140/90 mmHg or taking medication). Hypertension is a silent condition, meaning that most are unaware that they have it, which means it can go undiagnosed for some time. Furthermore, when participants are diagnosed they can be reluctant to take their medication as they fail to understand the silent nature of the condition and cannot feel the medication taking effect. This is why we have chosen participants with poorly controlled essential hypertension as the target population for this research project.

We believe that the outcomes of our research could improve the health outcomes of patients with essential hypertension. Our research could also increase the awareness of health coaching within the pharmacy profession and see the widespread introduction of health coaching within community pharmacies in Australia. This would see the improvement in participant health outcomes.

This research project is being conducted by Prof. Ieva Stupans, Prof. Gerard Kennedy and Harjit K Singh (research student). This research has not been funded.

The results of this research will be used by the student researcher Harjit K Singh as part of obtaining a Doctor of Philosophy degree.

Recruitment for this study will take place from RMIT University. The health coaching study will be conducted at pharmacies that agree to take part in the study and employ a pharmacist willing to participate in the trial.

3 What does participation in this research involve?

To be eligible to participate in this project you must:

- Be a community pharmacist
- Have place of employment is within the Melbourne metropolitan area
- Have a commitment to the provision of community pharmacy services
- Be willing to undergo health coach training
- Be committed to the completion of the study

If you agree to participate you will be asked to sign a consent form. By signing this form, you are agreeing to participate in the research and are also agreeing to be interviewed by the research student on two occasions. You are also agreeing to this interview being recorded as part of this research.

As part of being signing consent and being part of this trial you will be assigned the role of study investigator. As part of this role you will be required to recruit, consent and screen participants for eligibility and participation in this trial.

3.1 Take part in health coach training

In order to take part in this health coaching study you must agree to be trained in the evidence based health coaching program established by the researchers. The training will run for approximately half a day.

3.2 Recruit, screen and consent potential participants
As part of the services provided by community pharmacies, patients that have their blood pressure regularly checked at the pharmacy can opt to have the readings documented in electronic pharmacy records. Patients will often request a copy of their records before seeing their GP or for their own records. You will be required to approach patients that have been identified as having poorly controlled essential hypertension according to your pharmacy records. Other patients taking antihypertensive could also be approached about the trial. Recruitment posters will also be place in pharmacy to assist with the recruitment of participants for the trial. When approaching potential participants about the trial you should provide patients with a brief overview of the trial in lay terms and also provide interested patients with a patient PICF to take home and read.

You will document on a record sheet provided by research team, the patient name, date approached about study and provided with PICF, and well as the date they followed up with the patient and the date the patient consented. This document will allow you to keep track of who you have approached about the study and who and when they need to follow up with the patient with regards to participation the trial. This document is to be kept confidential.

You should follow-up patients that you provided the PICF to at their next monthly visit to the pharmacy, unless the patient has contacted you about consenting sooner.
You should then in a private consulting area of the pharmacy consent patients to participate in the trial. This will involve going through the PICF with them as well as the consent form. You will be required to witness the participant sign the form.

You will then be required to screen these in order to ensure that they meet the inclusion/ exclusion criteria for the trial. Participants that meet study requirements can then receive health coaching at a time negotiated with you.

This is the first visits you will have with potential participants. You will be required to ask the potential participant questions to determine their eligibility to participate in the study. You will ask participants to sign a consent form if they are eligible for the study and choose to participate.

3.3 Complete baseline assessments for eligible participants
These assessments will occur at the second visit with eligible participants, or may also occur on the same day as the screening visit. This visit will occur before the first health coaching session. These assessments can alternatively be taken on the same day as the participant's first health coaching session. During this session you will ask the participant questions about their demographic information as well as the medications they take to manage their blood pressure. You will also measure the participant's blood pressure (BP), body mass index (BMI) and waist circumference. You will also be required to provide a questionnaire to the participant about the way they take their medications.
The assessments obtained from this visit will be compared to those obtained at the end of the study. They will help you and the participant keep track of the participant's progress throughout the study. Your questions and the participant's answers will be audio recorded so that we can evaluate the responses at the end of the study.

3.4 Undertake health coaching
You will be required to perform three health coaching sessions at one monthly intervals with eligible and consenting participants at your community pharmacy.

<u>Health Coaching Session 1 (total time ~15-30 minutes)</u>
During this session you will ask the participant questions about their blood pressure and how they manage it. This will help you guide the participant to set a monthly goal and methods of attainment. Your questions and the participant's answers will be audio recorded so that we can evaluate the responses to the questions at the end of the study.

Health Coaching Session 2 (total time~15-30 minutes)
At the beginning of this session you will measure the participant's blood pressure and compare it to the reading from the previous month. A discussion about the participant's experiences will follow. The participant's responses and expectations will help you guide them to set a monthly goal and methods of attainment. Your questions and their answers will be audio recorded so that we can evaluate the responses to the questions at the end of the study.

Health Coaching Session 3 (total time~15-30 minutes)
This session will follow the same format as the health coaching session 2.

3.5 Complete end of study assessments
End of study assessments will be conducted one month post the third health coaching session with the participant. At the beginning of this session you will measure the participant's blood pressure and compare it to the reading from the previous month. You will also measure the participant's weight and waist circumference and compare this to the baseline measurements. You will then discuss with the participant the goal they set for themselves in the previous month and the experiences and challenges they faced in that time. During this session you will also ask the participant the same questions that you asked them at the first health coaching session. The questions you ask and the participant's responses will be audio recorded so that we can evaluate the responses to the questions at the end of the study. You will also ask the participant to complete the questionnaire about the way they take their medications.
At the completion of all study visits you will provide the patient with at $50 Coles voucher as compensation for their time. The research team will provide you with this voucher.

3.6 Be interviewed by the researchers
Your participation will involve two interviews undertaken by the researchers. These interviews will occur after the first health coaching session you have with your participants and at the completion of the study and will take approximately 15 minutes each. During the interview the researcher will ask you questions that will enable them to gain insight into your reflections about health coaching. These interviews will be audio recorded so that the researchers can evaluate the responses to the questions at the end of the study.
You may stop the interviews at any time. Unless you say that you want us to keep them, any recordings will be erased and information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.

There are no costs associated with participating in this research project, nor will you be paid.

Table 1 Outline of study activities

Visit	Description	Start relative to previous activity	duration	Comment
Pre-study	Pharmacist health coach training session	~ 1 month prior to study commencement	~ 15 minutes	
Visit 1	Screening -consent	-	~ 15 minutes	
Visit 2	Baseline Assessments	0 days to 1 month	~ 15 minutes	
Visit 3	Health Coaching Session 1	0 days to 1 month	~ 15-30 minutes	Visit 1-3 may coincide with each other
[redacted]	Health Coach reflection interview	Prior to visit 4	~ 15 minutes	
Visit 4	Health Coaching Session 2	1 month	~ 15-30 minutes	

Visit 5	Health Coaching Session 3	1 month	~ 15-30 minutes	
Visit 6	End of Study Assessments	1 month	~ 15-30 minutes	
[redacted]	Health Coach reflection interview	At end of study	~ 15 minutes	

4 What do I have to do?

This trial will involve you undertaking three health coaching sessions with your patients. Each health coaching session will go for approximately 45 minutes. The trial will also involve you conducting an end of study visit with each of your patients. At the completion of the study you will also be interviewed by the research student, It is expected that the total time duration and thus commitment to the study is 6 months.

5 Other relevant information about the research project

It is anticipated that up to 30 participants will be recruited for this project. The project will run at 3 community pharmacies. It is unlikely that you will be in contact with other participants in the study. The study will run for approximately 6 months at each site.

Health coaching recipients will receive a $50 Coles voucher at the completion of all their study visits as compensation for the time they have invested in the study.

6 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your relationship with the researchers or with RMIT University.

You may stop the interview with the researcher at any time. Unless you say that you want us to keep them, any recordings will be erased and information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.

7 What are the alternatives to participation?

There are no alternatives to participation. If you do not want to participate in the study you do not have to do so.

8 What are the possible benefits of taking part?

We cannot guarantee or promise that you will receive any benefits from this research; however, possible benefits may include improvements in the management of your participant's blood pressure.

9 What are the possible risks and disadvantages of taking part?

The risks and disadvantages experienced upon participation in this project are low; however, participation may involve taking some time out of your schedule each month for the duration of the study, which could be inconvenient. In addition there is a chance that you could become uncomfortable when being interviewed by the researcher about your experiences. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately.

10 What will happen to my results?

At the completion of the trial, the research student will de-identify all data for the purpose of data analysis.

11 What if new information arises during this research project?
If we find that the health coaching provided by community pharmacists is a valuable service and is improving the health outcomes of you patients you will have the option of continuing to offer the service at the completion of the trial.

12 Can I have other treatments during this research project?
Please continue to provide standard care to the trial patients when they present to the pharmacy on non-health coaching days.

13 What if I withdraw from this research project?
If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify a member of the research team.

You have the right to have any unprocessed data withdrawn and destroyed, providing it can be reliably identified

14 Could this research project be stopped unexpectedly?
It is unlikely that this trial will be stopped prior to completion. However some reasons for stopping unexpectedly may include:

- Large patient drop outs
- Pharmacists no longer willing to participate in the trial
- Nil improvements in patient outcomes

15 What happens when the research project ends?
At the completion of the research project it is anticipated that the information gathered will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified.

Part 2 How is the research project being conducted?

16 What will happen to information about me?
Any information obtained in connection with this research project that can identify you will remain confidential and will only be used for the purpose of this research project. Investigators in possession or control of participant data that may contain personal information shall not disclose that information to anyone other than the individual concerned. Names of participants will only feature on consent forms and will not be attached to any other data on which names will be replaced by initials and codes.

The study involves you asking participants questions about their health and blood pressure. These questions and participant answers will be audio recorded on a digital recorder. Your participation in this study will also involve two interviews undertaking by the researchers. These interviews will occur after the first health coaching session you have with your participants and at the completion of the study. During the interview the researcher will ask you questions that will enable them to gain insight into your reflections about health coaching. These interviews will also be audio recorded.

All audio recording will be transcribed manually into a word document using a computer. Transcripts will be analysed using computer – assisted qualitative data analysis (CAQDAS) such as NVivo. NVivo is software which allows researchers to categorise and analyse qualitative information into themes and attributes. The analysis of transcripts may also be undertaken manually through identification of recurring themes amongst the transcripts.

The conversations between you and the participant will be analysed by members of the research team. It is anticipated that the results of this research project will be published and/or

presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. You will be notified upon publication of study results.

All audio recordings will be erased after transcription. However, other research data (interview transcripts and analysis) will be retained on a password-protected electronic file on the RMIT University network for a period of fifteen years before being destroyed.

By signing the consent form you consent to the research team collecting and using information from you for the research project. Any information obtained in connection with this research project that can identify you will remain confidential

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the research team. You also have the right to request that any information with which you disagree be corrected. Please inform the research team member named at the end of this document if you would like to access your information.

However, considering all data collected at the completion of this study will be de-identified any requests to access personal data after this time may not be possible. Any requests made by before data is de-identified will be fulfilled.

Any information that you provide can be disclosed only if (1) it is protect you or others from harm, (2) if specifically allowed by law, (3) you provide the researchers with written permission. Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored.

17 Who is organising and funding the research?

This research project is being conducted by Prof. Ieva Stupans, Prof. Gerard Kennedy and Harjit K Singh (research student). The Coles vouchers used to reimburse the recipients of health coaching at the completion of the study, have been funded by The School of Health and Biomedical Sciences at RMIT.

18 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the HREC of RMIT University
This project will be carried out according to the National Statement on Ethical Conduct in Human Research (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

19 Further information and who to contact

If you want any further information concerning this project, you can contact the researcher or any of the following people:

Clinical contact person

Name	Ieva Stupans
Position	Chief investigator / Senior Supervisor
Telephone	
Email	

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	Ieva Stupans
Position	Chief investigator / Senior Supervisor
Telephone	
Email	

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

Reviewing HREC name	RMIT University
HREC Executive Officer	Peter Burke
Telephone	
Email	

Consent Form - *Adult providing own consent* ***(Pharmacist)***

Title	A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension
Short Title	Health coaching in community pharmacy
Protocol Number	1.0
Project Sponsor	
Coordinating Principal Investigator/ Principal Investigator	Ieva Stupans
Associate Investigator(s)	Gerard Kennedy Harjit K Singh (research student)
Location	RMIT University

Declaration by Participant

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future health care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print) _____

Signature _____ Date _____

Name of Witness* to Participant's Signature (please print) _____

Signature _____ Date _____

* Witness is not to be the investigator, a member of the study team or their delegate. In the event that an interpreter is used, the interpreter may not act as a witness to the consent process. Witness must be 18 years or older.

Declaration by Study Doctor/Senior Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Study Doctor/ Senior Researcher† (please print) _____

Signature _____ Date _____

† A senior member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature

Appendix 15. Participants with Poorly Controlled Hypertension-Participant Information Consent Form (PICF)

RMIT UNIVERSITY

Participant Information Sheet/Consent Form

Interventional Study - *Adult providing own consent* ***(Client)***

RMIT University

Title	A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension
Short Title	Health coaching in community pharmacy
Protocol Number	1.0
Project Sponsor	
Coordinating Principal Investigator/ Principal Investigator	Ieva Stupans
Associate Investigator(s)	Gerard Kennedy Harjit K Singh (research student)
Location	RMIT

Part 1 What does my participation involve?

1 Introduction

You are invited to take part in this research project, **A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension** You have been invited because you have poorly controlled essential hypertension and have been identified by your pharmacist as a good candidate for this study. This research project is assessing the outcomes of health coaching provided by community pharmacists in patients with poorly controlled essential hypertension. Your contact details were obtained from your community pharmacist.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the tests and research involved. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend or local doctor.

Participation in this research is voluntary. If you don't wish to take part, you don't have to. You will receive the best possible care whether or not you take part.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:

- Understand what you have read
- Consent to take part in the research project
- Consent to the tests and research that are described
- Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

Most often when you visit a health professional they tell you what you should do doing to improve your health and well being. More often than not this isn't what you want to do about health.

Health coaching is a more patient centred approach to health care, it involves you telling the pharmacist how you want to manage and improve your health. It is the role of the pharmacist to help you set goals and plans to improve your health.

Internationally health coaching provided by the community pharmacists has shown an improvement in patient's health and long term health outcomes, though; health coaching is not widely available within Australian community pharmacists. We think that this might be because of the limited number of pharmacy health coaching studies.
Hypertension, also known as high blood pressure is a common health condition amongst Australians. Hypertension is a silent condition which means people often don't know they have it; this can also make it difficult to manage because you can't feel your health improve when you use medicines. This is why many people have poorly controlled hypertension and this can lead to other health problems.
This is why we have chosen participants with poorly controlled essential hypertension as the target population for this research project.

We believe that our research could improve the health and wellbeing of patients with essential hypertension. Our research could also increase the awareness of health coaching within the pharmacy profession and see it being introduced into community pharmacies in Australia. This would see and an improvement in the health of many people.

The results of this research will be used by the student researcher Harjit K Singh as part of obtaining a Doctor of Philosophy degree.

3 What does participation in this research involve?
To be eligible to participate in this project you must:

- Be aged 18 or over
- Have essential hypertension BP ≥ 140/90 mmHg
- Be taking at least one medication to treat your essential hypertension
- Understand English language
- Be a non/ ex-smoker

If you agree to participate you will be asked to sign the consent form provided by your pharmacist. By signing this form, you are agreeing to participate in the research and are also agreeing to be interviewed by the pharmacist health coach at each health coaching session and at the end of the study. You are also agreeing to this interview being recorded as part of this research.

Participation in the study will involve attending your community pharmacy on a maximum of 6 occasions

The following outline what you will be required to do each visit:

<u>Visit 1 – Screening (total time 15 minutes)</u>
The first visit will involve you signing a consent form if you would like to participate in the trial and would like the pharmacist to determine if you are eligibility to participate in the study. This will involve the pharmacist asking you some questions.
If you do not meet the eligibility criteria for the trial you will not be able to participate and will be excluded from the trial.

<u>Visit 2- Baseline Assessment (total time ~15 minutes)</u>
This is a baseline visit. This visit will occur before your health coaching session. It can also occur on the same day as your first health coaching session. Your pharmacist will you questions

about your demographic information as well as the medications you take to manage your blood pressure. The pharmacists will also measure your blood pressure (BP), body mass index (BMI) and waist circumference. You will also be asked to complete a questionnaire about the way you take your medications. The assessments obtained from this visit will be compared to those obtained at the end of the study. They will help keep track of your progress throughout the study. The pharmacist's questions and your answers will be audio recorded so that we can evaluate your responses to the questions asked by the pharmacist.

Visit 3- Health Coaching Session 1 (total time ~15-30 minutes)
During this session the pharmacist will ask you questions about your blood pressure and how you manage it. This will help the pharmacist guide you to set a monthly goal and methods of attainment. The pharmacist's questions and your answers will be audio recorded so that we can evaluate your responses to the questions asked by the pharmacist.

Visit 4- Health Coaching Session 2 (total time~15- 30 minutes)
At the beginning of this session the pharmacist will measure you blood pressure and compare it to the reading from the previous month. A discussion about your experiences will follow. Your responses and expectation will help the pharmacist guide you to set a monthly goal and methods of attainment. The pharmacist's questions and your answers will be audio recorded so that we can evaluate your responses to the questions asked by the pharmacist.

Visit 5- Health Coaching Session 3 (total time~15-30 minutes)
This session will follow the same format as Visit 4.

Visit 6- End of Study Assessments (total time~15-30 minutes)
At the beginning of this session the pharmacist will measure you blood pressure and compare it to the one from the previous month. The pharmacist will also measure you weight and waist circumference and compare this to the baseline measurements. You will also be asked about your goal you set for yourself the previous month and your experiences and challenges you faced. During this session the pharmacist will also ask you the same questions that you were asked at the first health coaching session. The pharmacist's questions and your answers will be audio recorded so that we can evaluate your responses to the questions asked by the pharmacist. You will also be asked to complete the questionnaire about the way you take your medications.

3-month post study follow-up
At six months after your first health coaching session, a pharmacist health coach will contact you via telephone in order to get your perceptions and experiences about the health coaching sessions and how you are currently managing your blood pressure. This telephone conversation will be audio recorded. At the completion of the study the audio recordings will be transcribed. Any information that identifies you will be removed. The student will then use the data for the purpose of analysis.

3.1 Take part in one-on-one health coaching sessions:
This health coaching study involves three health coaching sessions at one monthly intervals with your community pharmacist. Each session will run for approximately 45 minutes to 1 hour. During these sessions the pharmacists will ask you questions about your general demographic information, your heath, medications and your hypertension in order to guide you to set goals and methods of attainment each month. The pharmacist's questions and your answers will be audio recorded. The pharmacist will also measure your blood pressure (BP), body mass index (BMI) and waist circumference, at various times during the study. This will help you and the pharmacist keep track of your health throughout the study.

The audio recordings from the study will be manually transcribed by the student researcher. These transcripts maybe analysed manually and/or using computer software such as NVivo. Transcripts of your interview may be reproduced in whole or in part for use in presentations or

written products that result from this study. Neither your name nor any other identifying information (such as your voice) will be used in presentations or in written products resulting from the study.

3.2 Complete medication adherence questionnaire
The purpose of this study is to evaluate the health coaching program. In order to do this, the pharmacist will ask you to complete a questionnaire about the way you take your medications once you have signed up to participate in the study. The questionnaire will take approximately 10 to 15 minutes to complete. You will also be asked to complete the same questionnaire at the end of the heath coaching study. There are no right or wrong answers. Your answers to these questions will help us determine if the program has been helpful to you.

There are no costs associated with participating in this research project, nor will you be paid.

4 What do I have to do?
This trial will involve you undertaking three health coaching sessions with your pharmacist. Each health coaching session will go for approximately 45 minutes. The trial will also involve an end of study visit with you pharmacist. It is expected that the total time duration and thus commitment to the study is 6 months.

5 Other relevant information about the research project
It is anticipated that up to 30 participants will be recruited for this project. The project will run at 3 community pharmacies. It is unlikely that you will be in contact with other participants in the study. The study will run for approximately 6 months at each site.
You will receive a $50 Coles voucher at the completion of all your study visits as compensation for the time you have invested in the study.

6 Do I have to take part in this research project?
Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your relationship with the researchers or with RMIT University.

You may stop the interview with the pharmacist at any time. Unless you say that you want us to keep them, any recordings will be erased and information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.

7 What are the alternatives to participation?
If you do not want to participate in the trial you do not have to. You will continue to receive standard care from your community pharmacist.

8 What are the possible benefits of taking part?
We cannot guarantee or promise that you will receive any benefits from this research; however, possible benefits may include improvements in the management of your blood pressure. You may gain some skills that may assist in the long term management of your health condition.

9 What are the possible risks and disadvantages of taking part?
The risks and disadvantages experienced by participating in this project are low; however, participation may involve taking some time out of your schedule each month for the duration of the study, which could be inconvenient. In addition there is a chance that you could become uncomfortable when being questioned by your pharmacist about your health. If you do not wish

to answer a question, you may skip it and go to the next question, or you may stop immediately. If you become uncomfortable as a result of your participation in the research project, members of the research team will be able to discuss appropriate support for you.

10 What will happen to results?
At the completion of the trial, the research student coordinating the study will remove of forms of information that can identify a person from the study documents. The student will then use the data for the purpose of analysis.

11 What if new information arises during this research project?
If we find that the health coaching provided by community pharmacists is a valuable service and is improving the health outcomes of participant's, you could request that your pharmacist continue to offer this service to you and others.

12 Can I have other treatments during this research project?
You will receive standard care from your pharmacist when you visit the pharmacy on your non-health coaching visits.

13 What if I withdraw from this research project?
If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify your pharmacist health coach.

You have the right to have any unprocessed data withdrawn and destroyed, providing it can be reliably identified.

If you withdraw from the study you have completed all of the health coaching visits you will not be eligible for the $50 voucher as compensation for the time you have invested in the study.

14 Could this research project be stopped unexpectedly?
It is unlikely that this trial will be stopped prior to completion. However some reasons for stopping unexpectedly may include:

- Large patient drop outs
- Pharmacists no longer willing to participate in the trial
- Nil improvements in patient outcomes

15 What happens when the research project ends?
At the completion of the research project it is anticipated that the information gathered will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified.

Part 2 How is the research project being conducted?

16 What will happen to information about me?
Any information obtained in connection with this research project that can identify you will remain confidential and will only be used for the purpose of this research project. Investigators in possession or control of participant data that may contain personal information shall not disclose that information to anyone other than the individual concerned. Names of participants will only feature on consent forms and will not be attached to any other data on which names will be replaced by initials and codes.

The study involves you asking participants questions about their health and blood pressure. These questions and participant answers will be audio recorded on a digital recorder. Your participation in this study will also involve two interviews undertaking by the researchers. These interviews will occur after the first health coaching session you have with your participants and

at the completion of the study. During the interview the researcher will ask you questions that will enable them to gain insight into your reflections about health coaching. These interviews will also be audio recorded.

All audio recording will be transcribed manually into a word document using a computer. Transcripts will be analysed using computer – assisted qualitative data analysis (CAQDAS) such as NVivo. NVivo is software which allows researchers to categorise and analyse qualitative information into themes and attributes. The analysis of transcripts may also be undertaken manually through identification of recurring themes amongst the transcripts.

The conversations between you and the participant will be analysed by members of the research team. It is anticipated that the results of this research project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified. You will be notified upon publication of study results.

All audio recordings will be erased after transcription. However, other research data (interview transcripts and analysis) will be retained on a password-protected electronic file on the RMIT University network for a period of fifteen years before being destroyed.

By signing the consent form you consent to the research team collecting and using information from you for the research project. Any information obtained in connection with this research project that can identify you will remain confidential

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the research team. You also have the right to request that any information with which you disagree be corrected. Please inform the research team member named at the end of this document if you would like to access your information.

However, considering all data collected at the completion of this study will be de-identified any requests to access personal data after this time may not be possible. Any requests made by before data is de-identified will be fulfilled.

Any information that you provide can be disclosed only if (1) it is protect you or others from harm, (2) if specifically allowed by law, (3) you provide the researchers with written permission. Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored.

17 Who is organising and funding the research?

This research project is being conducted by Prof. Ieva Stupans, Prof. Gerard Kennedy and Harjit K Singh (research student). The Coles vouchers used to reimburse participants at the completion of the study have been funded by The School of Health and Biomedical Sciences at RMIT.

18 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the HREC of RMIT University
This project will be carried out according to the National Statement on Ethical Conduct in Human Research (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

19 Further information and who to contact

If you want any further information concerning this project, you can contact the researcher or any of the following people:

Clinical contact person

Name	Ieva Stupans
Position	Chief investigator / Senior Supervisor
Telephone	
Email	

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	Ieva Stupans
Position	Chief investigator / Senior Supervisor
Telephone	
Email	

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

Reviewing HREC name	RMIT University
HREC Executive Officer	Peter Burke
Telephone	
Email	

Consent Form - *Adult providing own consent* ***(Client)***

Title	A pilot trial of health coaching in community pharmacy: the outcomes of patients with hypertension
Short Title	Health coaching in community pharmacy
Protocol Number	1.0
Project Sponsor	
Coordinating Principal Investigator/ Principal Investigator	Ieva Stupans
Associate Investigator(s)	Gerard Kennedy Harjit K Singh (research student)
Location	RMIT University

Declaration by Participant

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future health care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print) _____

Signature _____ Date _____

Name of Witness* to Participant's Signature (please print) _____

Signature _____ Date _____

* Witness is not to be the investigator, a member of the study team or their delegate. In the event that an interpreter is used, the interpreter may not act as a witness to the consent process. Witness must be 18 years or older.

Declaration by Study Doctor/Senior Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Study Doctor/ Senior Researcher† (please print) _____

Signature _____ Date _____

† A senior member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature

Appendix 16. Ethics Approval for Amendment to Pilot Pharmacist Health Coaching Trial- Principal Research Student to Conduct Health Coaching Activities

RMIT UNIVERSITY

Human Research Ethics Committee (HREC)
Research and Innovation office
NH&MRC Code: EC00237

Notice of Approval of Amendment

Date:	**14 May 2019**
Project number:	**21778**
Project title:	***A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension***
Risk classification:	**More than low risk**
Investigator:	**Prof Stupans**
Expiry:	**31 December 2019**

The request to amend the above project was approved by the Human Research Ethics Committee on 17 April 2019.

The following amendments are therefore approved:

a. Principal research student to conduct health coaching activities

The following documents have been approved:

Title	Date
Request for amendment form	1 April 2019
Trial protocol (v7)	1 April 2019

The following documents have been noted:

Title	Date
Response to HREC review	25 April 2019

Please retain this notice for future reference.

Regards

Prof Stephen Bird
Chairperson
RMIT HREC

cc: Ms Harjit Singh, research student

Appendix 17. Ethics Approval for Amendment to Pilot Pharmacist Health Coaching Trial-Payment for Participants and Addition of Co-Investigator

RMIT UNIVERSITY

Human Research Ethics Committee (HREC)
Research and Innovation office
NH&MRC Code: EC00237

Notice of Approval of Amendment

Date:	**17 July 2019**
Project number:	**21778**
Project title:	**A pilot trial of health coaching in community pharmacy**
Risk classification:	**More than low risk**
Investigator:	**Prof Ieva Stupans**
Expiry:	**31 December 2019**

The request to amend the above project was approved by the Human Research Ethics Committee on 17 July 2019.

The following amendments are therefore approved:

a. Payment for participants ($50 voucher)
b. Addition of co-investigator (Elena Stojanovska).

The following documents have been approved:

Title	Date
21778 Application form	June 2019
PICFs	June 2019
Protocol	June 2019

Please retain this notice for future reference.

Regards

Prof Stephen Bird
Chairperson
RMIT HREC

cc: Dr Peter Burke, HREC secretary
Harjit Singh, research student

Appendix 18. Ethics Approval for Amendment to Pilot Pharmacist Health Coaching Trial-Addition of a 3-Month Post-Study Assessment Time Point

RMIT UNIVERSITY

Human Research Ethics Committee (HREC)
Research and Innovation office
NH&MRC Code: EC00237

Notice of Approval of Amendment

Date:	**10 September 2019**
Project number:	**21778**
Project title:	***A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension***
Risk classification:	**More than low risk**
Investigator:	**Prof Ieva Stupans**
Expiry:	**30 June 2020**

The request to amend the above project was approved by the Human Research Ethics Committee on 10 September 2019.

The following amendments are therefore approved:

a. This amendment involves the addition of a 3 month post-study assessment time point to the study protocol.

The following documents have been approved:

Title	Date
21778 Stupans amendment request (3)	4 September 2019
PICF	4 September 2019
Trial protocol (v. 12)	4 September 2019

Please retain this notice for future reference.

Regards

Prof Stephen Bird
Chairperson
RMIT HREC

cc: Dr Peter Burke, HREC secretary
Prof Gerard Kennedy, Associate supervisor
Ms Harjit Singh, Research student

Appendix 19. Pilot Pharmacist Health Coaching Trial Protocol Phase II

Trial Protocol

Trial Title:

A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension

Phase II: 6 month telephone follow-up interview with patients

Project Summary: This project is looking at the outcomes of pharmacists as health coaches. Health coaching involves a more patient centred approach to the management of health and chronic disease. Unlike conventional care whereby the pharmacist or health care provider tells the patient what do; the patient is in control of their goals and health targets when they receive health coached.

This project will focus on pharmacists coaching patient's with poorly controlled essential hypertension. Hypertension is a health condition that affects a significant number of Australians. Due to the silent nature of the health condition it can often go undiagnosed for some time. Furthermore, when participants are diagnosed they can be reluctant to take their medication as they fail to understand the silent nature of the condition and cannot feel the medication taking effect, which can quickly lead to poorly controlled hypertension. We believe that through health coaching patient will be able to better understand their health condition and be more motivated to self-manage their hypertension.

INTERVIEW PROTOCOL

1. INTRODUCTION

The II phase of *A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension* will involve interviewing study participants at a 3 month post- study (6 month time point). Through the addition of the 3 month post-study assessment time point to the study protocol the research team aims follow up and check on the study participant's progress since his or her last health coaching appointment. The research team also aims to investigate if participants are making use of the skills learned during their health coaching sessions at the pharmacy.

Participants will receive a follow up by phone call by the research student at 6 months from their first health coaching session. During these telephone conversations the research student will ask the participant questions about their blood pressure and how they are currently managing it.

2. INTERVIEWER

The research student (Harjit Singh) will be undertaking these interviews with the study participant's. In order to minimise the inconveniences to the other pharmacist's health coaches taking part in this study, the research student was considered to be the most suitable person to undertake the 3 month post- study interviews with the study participants.

3. INTERVIEWEES

The interviewees will be the participants that consented to and completed the initial phase of *A pilot trial of health coaching in community pharmacy: the outcomes for patients with hypertension.*

Only participants that completed the study will be contacted .The study participants will have previously provided their contact details to the health coach. This information was collected in order to assist with confirmation of or changing health coaching appointments. These details will be used to contact participants for the 3 month post- study (6 month time point) interviews.

Participants will be verbally informed of the follow-up interview at the completion of the study.

4. CONTACTING INTERVIEWEES

The research student will contact the participant using the contact details previously provided.

Participants that have already completed the study will also be contacted at 3 months post study completion. These participants have been advised at their end of study visit that they **may** be contacted via telephone in a few months time for a follow-up and have been positive about being recontacted. These participants will also be forwarded a new consent form via post.

Similarly participants completing the study after approval of the requested amendment will also be advised that they **may** be contacted via telephone in a few months time for a follow-up, these participants will also receive a copy of the new consent form.

Participants will be initially contacted at approximately 3 months post-study via text message in order to arrange a time for a phone interview. The phone interview will be conducted at a time and date suitable for the participant. If participants do not reply to the initial text message, 2 additional attempts

will be made one week apart. After which the research student will exclude the participant from this phase of the study.
The consent process for both groups of participants is outline in Table 1.

5. INTERVIEWS

The phone interview will be conducted at a time and date suitable for the participant. The research student will call the participant from a private number.
If the person who answers the phone is not the intended interviewee, the research student will not disclose the specific nature of the call to the third party they are speaking to, rather will state

"I would like to speak to_____ regarding an appointment we have".

5. CONSENT

The follow-up interview will not proceed until the participant has had read to them the Information from the participant consent form for this study (Section 3 –3-month post study follow-up) and then provided their verbal consent. Confirmation of verbal consent will be documented in the participants study file.

> 3-month post study follow-up
>
> At six months after your first health coaching session, a pharmacist health coach will contact you via telephone in order to get your perceptions and experiences about the health coaching sessions and how you are currently managing your blood pressure. This telephone conversation will be audio recorded. At the completion of the study the audio recordings will be transcribed. Any information that identifies you will be removed. The student will then use the data for the purpose of analysis.

The participant will also be informed that they can choose to stop the interview at anytime as well as the recording.

Table 1 Contact and consent process for study participants

Step	Participant completed study	Participant to complete study
1	Contact is made with participant explaining new stage	Contact is made with participant explaining new stage
2	New PICF forwarded to participant via post	New PICF provided to participant directly during a health coaching session at the pharmacy
3	Participant contacted 3 months post study completion and arrangement is made for a telephone interview	Participant contacted 3 months post study completion and arrangement is made for a telephone interview
4	Verbal consent obtained prior to interview as per interview script (see 7)	Verbal consent obtained prior to interview as per interview script (see 7)

6. INTERVIEW QUESTIONS

The following questions will be asked by the research student during the interview with participants. The interview is expected to take between 15 and 20 minutes.

- How are you managing your blood pressure since the completion of the health coaching sessions?
- How often do you check your blood pressure?
- What's your diet and physical activity regimen like?
- Some people can sometimes forget to take their medications, how do you remember to take yours?
- Would you like to take part in a health coaching program again, if it was offered to you?
- Is there anything else that you would like to talk about?

7. INTERVIEW SCRIPT

PART I.

INSTRUCTIONS

I would like to speak to_____ regarding an appointment we have.

Good morning/afternoon/evening, my name is Harjit Singh I am a researcher from RMIT University and I am following up on the health coaching sessions you received at your community pharmacy. The purpose is to get your perceptions and experiences about the health coaching sessions and how you are currently managing your blood pressure. Your telephone number was obtained from your study file.

It is a good time to talk you and ask you a few questions about your health? This should take about 15-20 minutes. [If the participant does not agree to continue at this time, either make a new time for the interview or thank them for their time and hang up.]

PREAMBLE

> [It has been 3-months since you completed the health coaching study and 6 months since you had your first session. During this chat I will ask you questions to discuss your health and progress. This telephone conversation will be audio recorded. At the completion of the study the audio recordings will be transcribed. Any information that identifies you will be removed. I will then use the data for the purpose of analysis]-*from patient consent form*

TAPE RECORDER INSTRUCTIONS

If it is okay with you, I will be tape-recording our conversation. The purpose of this is so that I can get all the details but at the same time be able to carry on an attentive conversation with you? Any personal information you provide will be confidential and you will not be identified by name in any publication of the results. If you agree, I would also like to quote some of your responses. This will be done in a way that ensures you are unidentifiable and all names will be replaced with numbers or letters.

If at any time you would like me to turn off the audio recording please let me know, and I will do so.

The questions that I will ask you during our conversation may be sensitive in nature. I am aiming to enable you to enhance my knowledge of your health and the way you manage your blood pressure.

If they do raise upsetting issues you may wish to contact my supervisor Prof Ieva Stupans on 03 99257942/ ieva.stupans@rmit.edu.au.

If you have any questions feel free to stop me during out chat at anytime. If you would like for me to switch off the audio recording at anytime, please let me know.

This project has been approved by the RMIT ethics committee.

CONSENT FORM INSTRUCTIONS

Before we get started, I would like to take a moment to ask you a few questions in order to obtain your consent. Please answer 'yes' or 'no' to the following questions:

Have you been read the Information Sheet for Participants and any questions you may have, have been answered YES☐ NO☐

Do you agree to participate in this phone interview, knowing that you can withdraw at any time YES☐ NO☐

Do you agree to have the telephone interview audio recorded and transcribed? YES☐ NO☐

Do you agree that you may be quoted using numbers or letters? YES☐ NO☐

[If the participant does not agree with any of the statements, thank them for their time and hang up.]

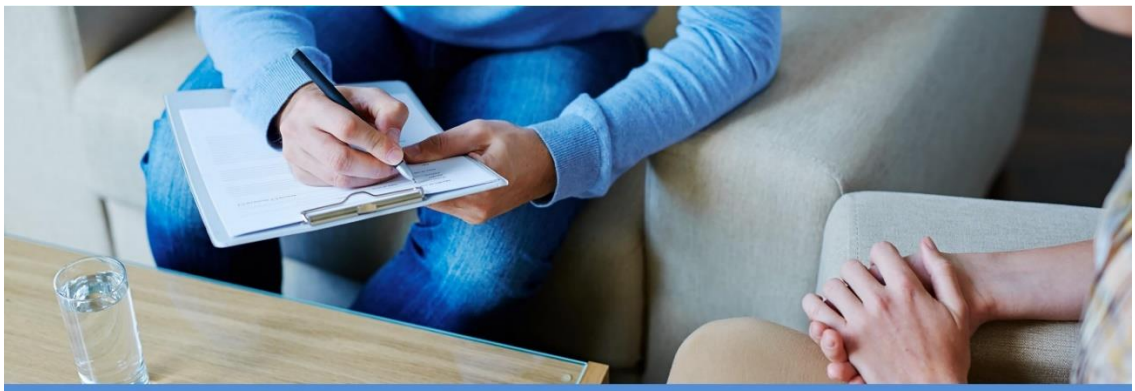
[If the participant does agree to continue with the telephone interview, proceed with the following steps:

- You have agreed to have these sessions audio recorded, if you change your mind at any time, please let me know and I will turn off the audio recording
- Turn on audio recorder
- Questions to ask the participant:
    - How are you managing your blood pressure since the completion of the health coaching sessions? ☐
    - How often do you check your blood pressure? ☐
    - What's your diet and physical activity regimen like? ☐
    - Some people can sometimes forget to take their medications, how do you remember to take yours? ☐
    - Would you like to take part in a health coaching program again, if it was offered to you? ☐
    - Is there anything else that you would like to talk about? ☐

That concludes today's chat. If at anytime you would like a copy of your results or would like to know more about the study, please contact Prof Ieva Stupans on 03 99257942/ ieva.stupans@rmit.edu.au

Thank you for your time and your contribution to this study.

Appendix 20. APSA Conference 2018 Poster Presentation

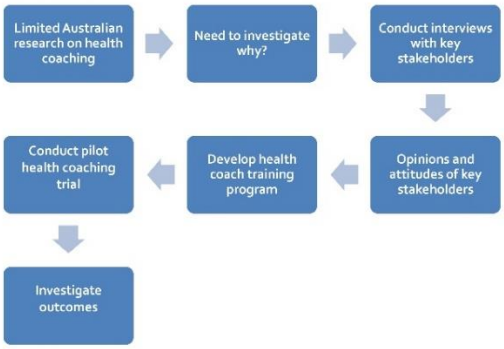


Interviews with key stakeholders : Opinions about and attitudes to pharmacy health coaching

Harjit K Singh, Gerard A Kennedy, Ieva Stupans

The School of Health and Biomedical Sciences
RMIT University

RATIONALE



METHOD

- Stakeholders from prominent pharmacy organisations approached.
- Stakeholders were consented and interviewed face to face or over the telephone by the research student.
- Stakeholders were asked questions about health coaching.
- Interviews were audio recorded.
- Audio recordings of interviews were manually transcribed.
- Manual analysis of interview transcripts was performed to identify codes and key themes.

RESULTS AND DISCUSSION

Analysis of the interview transcripts indicated the emergence of the following key themes: "positive view of health coaching in pharmacy"; "potential concerns about health coaching in pharmacy"; "barriers to integrating health coaching into pharmacy"; "facilitators to integrating health coaching into pharmacy" and "potential benefits of integrating health coaching into pharmacy".

CONCLUSION

This research has extended our knowledge about health coaching and has increased the awareness of health coaching within the pharmacy profession. The outcomes of the research will assist in the design of a health coach training program for community pharmacists, as well the development of a pilot trial involving pharmacists as health coaches.

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Appendix 21. APSA Conference 2019 Oral Presentation –Peer Reviewed Abstract

A comparison of pharmacist competency frameworks to competency frameworks of other health professionals engaged in health coaching.

Harjit K Singh[1], Gerard A Kennedy[1], Ieva Stupans[1]. The School of Health and Biomedical Sciences, RMIT University[1], Melbourne, VIC, Australia.

Introduction. In recent times pharmacists' roles have shifted from drug distribution to the provision of health promotion and management services such as health coaching. A systematic review was done to evaluate the competencies of primary health care professionals who have successfully engaged in health coaching. The traditional competency frameworks for coaches established by the International Coaching Federation (ICF) and the European Mentoring and Coaching Council (EMCC) fail to consider the differences in expertise required amongst the diverse professions that carry out coaching. Therefore, specifically of interest to the pharmacy profession, it is important to confirm that competency frameworks for pharmacists support the role of pharmacists as health coaches.

Aims. To identify competencies of health professionals engaged in health coaching, and to determine if pharmacist competency frameworks encompass competencies required to health coach.

Methods. Databases were searched to identify scholarly papers on competencies of health professionals engaged in health coaching. The enabling competencies of health coaches were subsequently compared to the competency frameworks of pharmacists from Australia (AUS), Canada (CAN), New Zealand (NZ), the United Kingdom (UK) and the United States of America (USA).

Results. Nine key competencies enabling health coaching were identified. Comparisons of the health coaching competencies to the competencies established by the ICF and EMCC showed considerable overlap. The pharmacist competency frameworks from AUS, CAN and NZ all lacked one health coaching competency; "demonstrates confidence", while pharmacists from both the UK and the USA included all the identified health coaching competencies.

Discussion. The nine key competencies specific to the practice of health coaching align with the competencies established by the ICF and EMCC. The identification of competencies specific to health coaches paves the way for health coach training programs tailored specifically to health professionals, and to the increased uptake of health coaching by health professionals and consequently improved health outcomes for patients

Appendix 22. APSA Conference 2020 ePoster –Peer Reviewed Abstract

A pilot pharmacist health coaching trial investigating changes to modifiable health behaviours

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Introduction. Pharmacists have used health coaching to improve patient management of hypertension in a number of international settings, but the provision of the service by Australian community pharmacists has been limited. During health coaching, the stages of change (SOC) approach can be applied to motivate and facilitate progress towards positive health behaviour change. This approach has been previously used by Australian pharmacists but has been confined to smoking cessation services. The application of the SOC model by pharmacists has involved interviews and questionnaires, which although convenient do not provide a realistic representation of the cyclic nature of the SOC. Thus, we have used a dynamic measure of SOC to evaluate the outcomes of health coaching by Australian community pharmacists in patients with poorly controlled hypertension.

Aims. To investigate whether pharmacist health coaching improves progression through the SOC for three-modifiable health behaviours: diet, exercise, and medication management in participants with poorly controlled hypertension.

Methods. Stages of change charts were developed for three-modifiable behaviours. In this pilot clinical controlled trial community pharmacist's health coached 20 participants with poorly controlled hypertension at monthly intervals. Changes in systolic hypertension and SOC with respect to the three modifiable health behaviours were assessed at session 1 and 4. To substantiate the behaviour change outcomes, SOC were also assessed in a validation group.

Results. Statistically significant changes in the modifiable health behaviours- medication management ($p = 0.03$) and exercise ($p = 0.01$) were apparent in participants who received health coaching and were evident through positive changes in the SOC charts. This correlated with a decrease in mean systolic blood pressure from session 1 to session 4 by 7.53mmHg ($p<0.05$). The participants in the validation group did not experience significant changes with respect to the SOC.

Discussion. Pharmacists successfully utilised the dynamic SOC tool to assess patient's readiness to change and facilitate progress in three modifiable health behaviours parallel to an improvement in systolic blood pressure. These results pave way for the application of the SOC tool by pharmacists to guide management of other chronic conditions

Appendix 23. Life Long Learning in Pharmacy (LLLP) Conference 2020 Accepted Abstract

ORAL SESSION:	
Title (Max 20 Words): Designing health coach training for Australian community pharmacists	
Author list	Harjit K Singh[1], Gerard A Kennedy[1], Ieva Stupans[1]
Affiliations of authors	[1]School of Health and Biomedical Sciences, RMIT University, Melbourne, VIC, Australia.
Structured abstract to include sub-headings: (max 250 words)	Background: Health coaching is based on facilitating a positive behaviour change. The service has produced favourable outcomes in patients internationally, though the provision of the service by Australian community pharmacists has been very limited. This may be partly attributed to the financial incentives for such a program, and partly to required competencies that enable health coaching, which include the delivery of the behaviour change intervention itself. Objective/Aim: To facilitate the development of evidence-based health coaching training program to train community pharmacists to health coach. Design/Method/Methodology: The competencies enabling health coaching were mapped to the Health Behaviour Change Competency framework (HBCC). Gaps were identified in the competencies enabling health coaching. This information was used to construct a pharmacist health coach training program. Results: Correlation between the health coaching competencies and the HBCC foundation competencies was apparent; however, the competencies enabling health coaching did not encompass most behaviour change competencies and behaviour change techniques defined by the HBCC. Discussion: The competency framework for health coaches lacks the competencies and techniques of behaviour change. Notably, Australian pharmacists already offer behaviour change interventions such as smoking cessation program and obesity management, confirming that pharmacists already have the foundational skills, communication skills, professional and ethical knowledge. However, pharmacists need training on the techniques promoting and facilitating behaviour change to provide successful health coaching interventions.
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Keywords	Health coaching, Competencies, Training, Australian community pharmacists, Behaviour change