

The perceived impact on wellbeing after health and wellness coaching – a qualitative evaluation

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The perceived impact on wellbeing after health and wellness coaching – a qualitative evaluation

Thesis Certification

I, Anton Green, declare that this thesis, which is submitted in fulfilment of the requirements for the award of a Master of Health Science, from the School of Public Health and Psychological Studies, Auckland University of Technology, New Zealand, is my own work unless otherwise referenced or acknowledged. Additionally, this thesis has not been submitted for qualifications at another institution.

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Abstract

Health and wellness coaching (HWC) is an evidence-based intervention to help individuals gain the knowledge and skills to undertake health-related behaviour change in their lives. The Primary Prevention of Stroke in the Community (PREVENTS) study was a randomised, controlled trial that examined the effectiveness of HWC as a primary prevention strategy for individuals identified as being at moderate to high risk of CVD or stroke. The aim of the current study was to explore the subjective experience of HWC and the impact on wellbeing in a subset of PREVENTS participants 2-3 years post participation. Eight participants, who were previously enrolled in the PREVENTS study, were interviewed. Research was undertaken using transcendental phenomenology as the qualitative methodology, and thematic analysis was used to analyse the data. A number of important insights for health-related behaviour change emerged from the participant's subjective experience of HWC. Awareness, knowledge, intrinsic motivation, and self-efficacy were identified as important for health behaviour modification to occur. The supporting role of the coach and social support networks were essential for facilitating and sustaining long-term lifestyle change. Participants who had changed health behaviour in physical, psychological and social domains of their lives, experienced the highest levels of wellbeing, quality of life, and life satisfaction 2-3 years after HWC. Outcomes from the study may inform future strategies for health-related behaviour change and support the efficacy of HWC as a primary prevention intervention for individuals at high-risk of CVD and stroke.

Keywords: Stroke risk, health-behaviour change, health and wellness coaching, quality of life, life satisfaction, wellbeing.

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Introduction

The global burden of disease has, over the past two decades, shifted away from communicable diseases towards noncommunicable diseases such as cardiovascular/cerebrovascular diseases (CVDs), cancers, chronic respiratory diseases, and diabetes (Murray et al., 2012). Of these noncommunicable diseases, CVDs result in the highest number of deaths globally (World Health Organisation, 2018). Stroke is included under CVD and causes significant disability and death annually (Lawes, van der Hoon, & Rodgers, 2008; Tobias, Cheung, Carter, Anderson, & Feigin, 2007). There is also a significant medical, economic, and social burden in caring for survivors of stroke (Feigin et al., 2006). The costs of treating stroke amounted to about 3% of total health-care expenditure in eight countries (Evers et al., 2004). The incidence of stroke is high in New Zealand in relation to other developed countries, (1.5% of the population in 2015-2016), with a significantly higher incidence (20%) amongst Māori and Pasifika populations (Feigin, Carter, & Hackett, 2006; Feigin, Lawes, Bennett, Barker-Collo, & Parag, 2009). The importance of implementing primary stroke prevention behaviours by at-risk individuals, prior to a first-ever stroke occurring, cannot be over-emphasised.

Primary prevention remains the most effective method for stroke prevention because stroke is highly preventable and over 76% of strokes are first events (Meschia et al., 2014; O'Donnell et al., 2010). Primary prevention of stroke includes control of modifiable risk factors, such as lifestyle changes and medication adherence in order to lower blood pressure and cholesterol levels, as well as control diabetes mellitus and atrial fibrillation. For individuals at risk of stroke, this may entail modifying their lifestyle and health-related behaviours. Lifestyle modification involves weight loss, alcohol restriction, regular aerobic exercise, stress management and smoking cessation (Ezekowitz, Strauss, Majumdar, & McAlister, 2003).

Health and wellness coaching (HWC) is a multidimensional psychological intervention intended to motivate individuals to undertake lifestyle modification (Sfrazo et al., 2018). The intention is to educate, motivate, guide, and support at-risk individuals, to self-manage their health-related behaviours and lifestyle choices (Kivela, Elo, Kyngas, & Kaariainen, 2014;

Wolever & Eisenberg, 2011). The PREVENTS study was carried out in Auckland, New Zealand, in 2017, to explore the effectiveness of HWC as a primary prevention strategy to reduce modifiable risk factors of individuals at risk of stroke and CVD (Mahon et al., 2018).

Evidence from studies of post-stroke survivors, has found that wellbeing and quality of life is negatively impacted (Niema, Laaksonen, Katila, & Waltimo, 1988; Feigin et al., 2010; Serda et al., 2015). The threat of a secondary stroke is also high for post-stroke survivors (Hankey & Warlow, 1999). Previous research has found that HWC, as a primary prevention strategy, positively impacts health behaviours and enhances wellbeing in patients with chronic diseases (Kivela, Elo, Kyngas, & Kaariainen, 2014; Gordon, Salmon, & Gordon, 2017). This suggests that interventions, such as HWC, that aim to change health behaviours prior to the occurrence of a first-ever stroke or other chronic illness, may be an effective strategy to achieve positive health outcomes and enhance quality of life, whilst reducing the economic and health-care burden of treating stroke and/or other chronic diseases.

According to the World Health Organisation (2018), health is a state of complete physical, mental, and social wellness. Wellbeing is not simply the absence of disease, illness or injury, but it is rather a combination of physical, mental, emotional, and social health factors (Njoku, 2015). It is also associated with happiness and life satisfaction. The Centres for Disease Control and Prevention define wellbeing as “the degree to which one feels positive and enthusiastic about life” (Manderscheid et al., 2010, n.p.). Improved wellbeing is associated with health, wellness, and disease prevention (Kivela, Elo, Kyngas, & Kaariainen, 2014). The aim of this research was to explore the impact of HWC on the health and wellbeing of individuals that participated in the PREVENTS study, 2-3 years post study. The research will examine, from a qualitative perspective, the subjective experience of HWC for participants. It will also examine how HWC has impacted upon wellbeing outcomes such as quality of life and life satisfaction for participants. Finally, it will explore which factors, attributable to HWC, may determine wellbeing and sustainable healthy lifestyle outcomes for participants.

Chapter 1

Background to the research

1.1. Stroke and cardiovascular disease risk

Chronic disease and cardiovascular disease

In the latter half of the twentieth century, the global burden of disease has shifted from that of communicable diseases to noncommunicable diseases. Developments in medical science, from a range of effective immunisations to antibiotics, has been successful in curbing the burden of communicable diseases such as typhoid, cholera, smallpox etc (Ferriman, 2007). The burden of noncommunicable diseases such as CVDs, diabetes or cancer cannot be underestimated though. The World Health Organisation (WHO) estimated that noncommunicable diseases were responsible for 68% of all deaths globally in 2012 (WHO, 2014). Noncommunicable chronic diseases include disease and disability conditions that individuals live with over an extended period. Improving the health of individuals at risk of chronic diseases such as CVDs, stroke, diabetes and so forth, requires an increased focus on management and prevention of chronic disease, principally at a primary-care level. Primary prevention is fundamentally different from acute care. The focus is on identifying at-risk individuals with interventions such as early disease risk detection through screenings, and pharmacological and psychological interventions, such as medication adherence and lifestyle behaviour modification, in order to manage their risk (Beaglehole et al., 2008).

CVDs are classified by the WHO as physiological disorders of the heart and blood vessels. They include: coronary heart disease, cerebrovascular disease, peripheral arterial disease, rheumatic heart disease, cardiac embolism, and congenital heart disease. According to WHO epidemiology reports in 2018, four out of five CVD deaths are as a result of heart failure or

stroke. CVDs are the leading cause of death globally. WHO statistics (2018) revealed that 17.9 million people died from CVDs in 2016, where 85% of those deaths were attributable to heart attack or stroke. CVDs caused 37% of all premature deaths (below age 70) in 2015. The most common behavioural risks for heart disease and stroke are a lack of physical activity, unhealthy diet, smoking, and harmful alcohol use. Hereditary factors, stress, and low socio-economic status are further risk factors for CVDs (WHO, 2018). Evidence suggests multifactorial lifestyle interventions are needed to address the high global incidence of cardiovascular disease (Sisti et al., 2018).

Stroke

Stroke is a sub-type of CVD and until 2009, the WHO defined it as an acutely developing clinical disturbance (focal or global) of cerebral function, lasting more than twenty-four hours, that may lead to death, and with no other basis other than vascular cause (Aho et al., 1980). Stroke and transient ischemic attacks (TIA) have recently been re-defined by the WHO's International Classification of Diseases (ICD-11). Shakir et al. (2016) maintain that stroke is a brain disease and should be classified under nervous system diseases. Central nervous system (CNS) infarction is now defined as "pathological, imaging, or other objective evidence of cerebral, spinal cord, or retinal focal ischaemic injury based on symptoms persisting ≥ 24 hours, or until death, and other aetiologies excluded" (Sacco et al., 2013, p. 2066). TIA is defined as "a transient episode of neurological dysfunction caused by focal brain, spinal cord or retinal ischemia without acute infarction in the clinically relevant area of the brain. Symptoms should resolve completely within 24 hours" (Sacco et al., 2013, p. 2066). The National Stroke Association (2018) defines stroke as a brain attack that occurs when blood flow to an area of the brain is cut off. The blockage of blood flow to the brain prevents oxygenation of neurons, resulting in neuronal death and brain injury (Barnett, 1998).

The Centres for Disease Control and Prevention (2018) categorise the major pathological types of stroke as ischemic stroke (IS), primary intracerebral haemorrhage (ICH) and sub-arachnoid haemorrhage (SAH). IS occurs as a result of an arterial blockage, whilst ICH and SAH occur when either an artery ruptures or bleeding occurs between the brain and

subarachnoid tissue. Transient Ischemic Attacks (TIA) may also occur. These are mini strokes where blood flow blockage in the brain occurs for only a short time.

The burden of stroke

There were 15.3 million strokes worldwide in 2002, of which 5.5 million resulted in death (WHO, 2008). Stroke is also a major cause of disability in adults worldwide (Lawes, van der Hoon, & Rodgers, 2008) and is the greatest cause of disability for older-age stroke survivors (Dyall, Feigin, Brown, & Roberts, 2008). According to Feigin et al. (2018), stroke accounts for 5% of disability worldwide and 10% of deaths worldwide. Feigin et al. (2017a) maintain that over the past 30 years there has been an increase in stroke burden. The absolute number of deaths and disability from stroke has increased despite an overall reduction in the rate of mortality. Tobias, Cheung, Carter, Anderson, and Feigin (2007) report that stroke is the third leading cause of mortality after cancer and heart disease. The global lifetime risk for stroke, after age 25, was found to be approximately 25% for both men and women (Feigin et al., 2018).

The Ministry of Health (2016) reports that the prevalence for stroke amongst adults in New Zealand was 1.5% (2015-2016) and the incidence rate is 126 persons per 100 000 (Feigin, Lawes, Bennett, Barker-Collo, & Parag, 2009). According to Feigin, Carter, and Hackett (2006), Māori and Pasifika populations in New Zealand experience stroke at a younger age, have a higher incidence, and poorer outcomes from stroke when compared to New Zealand Europeans (Pakeha). The high rates of stroke amongst Māori and Pasifika populations may explain the high stroke incidence in New Zealand (20% higher), when compared to other developed nations (Feigin et al., 2015). Feigin et al. (2006) found that Māori, Pasifika, Asian and other ethnicities were 1.5-3 times more at-risk of an ischemic stroke than NZ Europeans. A study of stroke incidence by major pathological types in the Auckland region between 2002 and 2011, found that although the incidence of IS and ICH had remained stable, the incidence of stroke-related risk factors (high blood pressure and smoking) had increased. This was mainly noticeable in Māori and Pasifika populations (Krishnamurthi et al., 2018). Feigin et al. (2006) reported that in comparison to New Zealand Europeans, whose average age of

stroke onset was over 75 years old, onset for Māori was at 61 years and Pasifika at 64 years old. Dyall et al. (2006) found that women in New Zealand, on average, experienced stroke at an older age than men (76 years old) whilst Māori/Pasifika women had a stroke onset 15 years earlier than men.

The importance of maintaining a healthy lifestyle, in order to protect against stroke, can be evidenced by the multitude of functional difficulties that stroke survivors face. Survivors face complex physical, cognitive, and psychosocial consequences from their stroke that pose long-term challenges to daily living (Feigin et al., 2018). Approximately 500 out of every 100 000 people live with some form of post-stroke consequence (Donnan, Fisher, Macleod, & Davis, 2008). The threat of a secondary stroke is also high for post-stroke survivors. Hankey and Warlow (1999) reported that 7% of stroke survivors will have a recurrent stroke event each year after their first stroke. A study by Hankey, Jamrozik, Broadhurst, Forbes, and Anderson (2002) revealed that 5 years after a first stroke, $\frac{1}{2}$ of those stroke victims had died, whilst another $\frac{1}{3}$ were disabled. Stroke survivors may also present with complex symptomology. They face physical challenges such as walking, or performing self-care activities (grooming, dressing, preparing meals, eating etc.), which has significant impact on activities of daily living (Morris, Oliver, Kroll, Joice, & Williams, 2017). They may experience cognitive difficulties, ranging from mild cognitive impairment to severe dementia (Delavaran et al., 2017). There exists a high correlation between anxiety, post-traumatic stress, and depression amongst stroke survivors (McCurley et al., 2019). Cognition impairments are associated with behaviour change and may manifest in a range of behaviours from apathy to aggression (Nijse, Spikman, Visser-Meily, de Kort, & van Heugten, 2019). A meta-analysis of 24 studies of post-stroke fatigue showed a significant relationship with depression and disability (Cumming et al., 2018). Stroke survivors regularly experience a loss of social networks and social isolation. Poor social support was found to be associated with psychological distress, a poorer quality of life, and worse recovery (Hilari & Northcott, 2017).

There is also a significant financial cost associated with stroke. A review of the costs of treating stroke amounted to about 3% of total health-care expenditure in eight countries (Evers et al., 2004). There is a significant medical, economic, and social burden in caring for survivors of stroke (Feigin et al., 2006). Stroke also places the highest economic burden on

countries that can least afford the necessary healthcare interventions. A systematic global stroke incidence and early fatality review of cases by Feigin et al. (2009), from 1970 to 2008, found that stroke incidence rates in low to middle income countries exceeded that of high-income countries by 20%. This also accounted for 85% of stroke mortality worldwide (O'Donnell et al., 2010).

Stroke risk factors

There are multiple risk factors for stroke: hypertension, heart disease, atherosclerosis, diabetes, elevated total blood cholesterol, and so forth. Cardiac disorders such as rheumatic or valvular heart disease, endocarditis, and cardiac surgery can potentially cause embolic stroke (Kakkad & Rathod, 2018). Risk factors for stroke are both modifiable and non-modifiable. Non-modifiable risk factors for stroke are age, sex, and ethnicity. Most strokes are preventable by way of managing modifiable stroke risk factors (Eames, Hoffmann, Worrall, & Read, 2011; Sakakibara, Kim, & Ang, 2017). The INTERSTROKE study aimed to determine which modifiable risk factors are associated with stroke. The study identified the modifiable risk factors for stroke as hypertension, smoking, abdominal obesity, poor diet, lack of physical activity, diabetes mellitus, high alcohol intake, psychosocial stress factors, cardiac causes, depression, and apolipoproteins (O'Donnell et al., 2010). These risk factors accounted for 90% of the population-attributable risk (PAR). According to the INTERSTROKE study, addressing modifiable risk factors such as hypertension, smoking, alcohol consumption, obesity, diet, and exercise, can decrease the incidence of stroke. Similar findings by Tikk et al. (2014) supports the idea that modifying health behaviours by avoiding excess body weight, smoking, excess alcohol consumption, unhealthy diet, and physical inactivity will reduce the risk of a stroke. Stroke recurrence rates are high (20%-25%) and interventions that improve adherence to medication and lifestyle changes may be effective in targeting modifiable risk factors and improving long-term stroke-related health outcomes (Barker-Collo, Krishnamurthi, & Witt, 2015).

Lifestyle choice and behaviour is a significant determinant for stroke risk (O'Donnell et al., 2010). A systematic review and meta-analysis by Sakakibara, Kim, and Eng (2017) reported

that many stroke survivors continued with the poor lifestyle behaviours that may have contributed to their stroke in the first place. Poor health choices included a lack of physical activity, a non-adherence to medications, and poor dietary choices. Community screening for CVD risk factors in New Zealand revealed high blood pressure and elevated LDL cholesterol levels, in spite of prescribed treatments, which suggests poor adherence to medication regimes and a failure to implement recommended lifestyle changes (Faatoese et al., 2011). Despite advances in health-care technology, health-related behaviour modification remains a variable outcome. (Schroeder, 2007). Convincing and motivating people to adopt healthier lifestyles is difficult (Cannon, 2018), but if the medical, economic and social burden associated with stroke is to be challenged, primary prevention strategies are essential to change and sustain healthy behaviour over time, and to protect against a first-ever stroke occurring.

1.2. Health behaviour change and behaviour change models

Changing health behaviours

Primary prevention strategies are recommended to encourage health-related behaviour change for individuals at risk of CVD and stroke (Goldstein et al., 2010). Primary prevention strategies target modifiable risk factors. These may include the treatment of hypertension by monitoring blood pressure and prescribing medication, smoking cessation techniques, modifying diet by reducing foods high in sodium, and encouraging the consumption of fruit and vegetables. Increasing the amount of physical exercise also improves health. The Ministry of Health (2018) recommends 2.5 hours of moderate exercise each week, and for individuals at 10% 5-year CVD risk or higher, physical activity is highly recommended.

According to Cannon (2018), changing health-related behaviours is difficult and not always successful because of a number of influential factors. Health knowledge and education alone does not guarantee behaviour change (Laverack, 2017). Behaviour change is a product of physical, psychological and psychosocial influences and these factors may change over time.

Motivating individuals to change unfavourable health behaviours is a challenge for health professionals, but growing evidence suggests that involving people in their own decision-making results in more favourable outcomes (Van Steenkiste et al., 2007). Fostering a sense of self-determination, self-responsibility and ownership enhances motivation, satisfaction and adherence to healthier lifestyle choices. Laverack (2017) believes that in order for people to change health behaviours the following elements need to be in place: (1) an appropriate behaviour change approach; (2) a framework that provides a supportive environment; and (3) the empowerment of individuals to make their own healthy lifestyle decisions.

Numerous studies have examined the factors that play an important role in lifestyle change amongst individuals to achieve positive health outcomes. Factors such as physical activity levels were associated with positive lifestyle modification (Shaugnessy, Resnick, & Macko, 2006). Increased physical activity (Morris, 2016), lowered blood pressure (Mant, McManus, & Hare, 2006) and medication compliance (Chapman & Bogle, 2014) were all associated with favourable health outcomes. Psychological factors such as self-efficacy (Lapadatu & Morris, 2019) were associated with a healthy lifestyle change, whilst depression and anxiety (Dafer, Rao, Shareef, & Sharma, 2008; Barker-Collo et al., 2017) were associated with poorer wellbeing. Illness beliefs and perceptions post-stroke (Aujla, Walker, Vedhara, & Sprigg, 2019; Sjolander, Eriksson, & Glader, 2013) were found to significantly impact recovery. Jorge, Starkstein, and Robinson (2010) found that post-stroke apathy was associated with functional decline in survivors, whilst increased motivation amongst stroke survivors facilitated positive lifestyle change (Rimmer, Wang, & Smith, 2008). Psychosocial factors were also found to influence health-related behaviour. Perceived social support from family (Prakash, Shah, & Hariohm, 2016), peer support (Damush, Plue, Bakas, Schmid, & Williams, 2007) and health-care providers (Shaugnessy et al., 2006) were correlated with positive health-related outcomes. Quality of life (Remer-Osborn, 1998) and satisfaction with care (Pound, Tilling, Rudd, & Wolfe, 1999) were also found to play a role in health-related outcomes.

DiMatteo, Haskard-Zolnieriek, and Martin (2012) found that half of chronically ill patients failed to adhere to prescribed treatment regimes. Self-management of modifiable risk factors (smoking, physical activity, medication adherence etc.) by at-risk individuals is essential in

order to achieve improved health, that is sustainable over time, and that will enhance their quality of life. Social cognitive theory proposes that behaviour is a product of an interaction between cognitive processes and environmental situations (Bandura, 1998). According to this theory, the determinants of health-related behaviour change are a knowledge of health risks and the benefits of healthy lifestyle choice, perceived self-efficacy to control one's own health behaviours, outcome expectations from changing health behaviours, the strategies and goals that are employed to change behaviour, and the perceived facilitators for health-related change (Bandura, 2004). Bandura maintains that more attention needs to be devoted to promoting psychosocial models of change that give people the necessary resources and guidance to ultimately enable self-help.

Health behaviour change theories and models

There are a number of behaviour change theories and models that have been developed in order to understand and facilitate health behaviour change and improve health outcomes. It is apparent that health-related behaviour change is complex, with multiple levels of influences. No single theory or conceptual model dominates health behaviour change, rather, these theories/models can be tailored to suit specific aims and contexts of different health paradigms (Kelly & Barker, 2016). It is important to understand the psychology that underpins health-related behaviour change theories and models in order to determine which of these might best be applied to behaviour change for individuals at risk of CVD or stroke.

A systematic review of evidence-based health behaviour change theories and programmes for the New Zealand Ministry of Health (2012) found that social learning theory (Bandura, 1977) was the most effective behaviour-change theory to improve health behaviours amongst patients with chronic conditions. The theory proposes that behaviour change is as a result of cognitive learning processes that occur in a social context through observation, imitation, modelling, and direct instruction. Motivational interviewing was also found to be an effective intervention for behaviour change for individuals with chronic conditions (Zomahoun et al., 2017). It was also effective for eliciting health-related behaviour change prior to the onset of a chronic illness (Hardcastle, Taylor, Bailey, Hatley, & Hagger, 2013). Motivational

interviewing can be defined as “a collaborative, person-centred form of guiding to elicit and strengthen motivation for change” (Miller & Rose, 2009, p. 531). The aim of motivational interviewing is to empower the client to motivate self-directed behaviour change. The principles to motivate behaviour change are: an expression of empathy towards the client, active listening, supporting and developing discrepancy between the client’s goals and current behaviours in order to overcome ambivalence and resistance to change, and supporting client self-efficacy and autonomy (Miller & Rollnick, 2013).

Self-determination theory has been proposed as a framework for understanding health behaviour change. The theory assumes that individuals have a natural tendency for personal growth in order to achieve wellbeing. Deci and Ryan (1985) suggest that engaging in positive health behaviours for autonomous reasons results in more adaptive outcomes, enhanced wellbeing, and more effective behavioural adaptation and health maintenance. Intrinsic motivation is behaviour that arises within the individual because it is satisfying and driven by internal rewards. It is the most autonomous form of motivation. The theory maintains that autonomous motivation is facilitated through three psychological needs; autonomy (self-empowerment and self-choice), competence (self-belief in one’s ability), and relatedness (feeling supported and valued by others).

Prochaska (1997) proposes that an individual’s readiness to change health behaviour is an interaction of stages of change, processes of change and self-efficacy. His transtheoretical model suggests that individuals move through stages of change: pre-contemplation, contemplation, preparation, action, maintenance and termination. Processes of change are the covert and overt activities that individuals employ to move through the stages. They include consciousness raising (awareness of problem behaviours), dramatic relief (emotional persuasion), self-re-evaluation (cognitive/affective self-image), environmental re-evaluation (effect of behaviour on others), self-liberation (self-efficacy to change), social liberation (social opportunity for change), counterconditioning (a good behaviour to replace a bad behaviour), stimulus control (behaviour cues), contingency management (behavioural consequences), and helping relationships (support). Change may occur at different rates for individuals and they may even move back and forth between stages, before achieving the

final stage of termination. Self-change is a product of individuals doing the right thing (processes) at the right time (stages).

The information-motivation-behavioural skills model (IMB) was developed by Fisher and Fisher (1992) to examine the determinants of risky and preventative behaviour amongst HIV positive individuals. The model asserts that well informed individuals, who are motivated to act, and who possess the necessary behavioural skills, will be most likely to modify and maintain health-promoting behaviours. Information can include specific facts, relevant heuristics (simple rules for easy decision making) and implicit theories to assist individuals to act. Personal motivation (attitudes) and social motivation (support) are crucial for change. Behavioural skills necessary for carrying out behaviour change actions focus on an individual's objective abilities and perceived ability (self-efficacy). Review of correlational literature in multiple areas of health-related behaviour (e.g. breast self-examination) by Fisher, Fisher, and Harman (2003), suggests that this model is a generalisable approach across multiple domains of health behaviour and chronic conditions.

The health action process approach (HAPA) proposes that adoption, initiation and maintenance of health behaviours is a process that consists of a motivation phase and a volition phase (Schwarzer, 2008). In the motivation phase, self-efficacy and outcome expectations are viewed as major predictors of intentions. Risk perception may also contribute, but to a lesser extent. In the volition phase, intentions have been transferred into actions (action plans and action control). The volition process is influenced by self-efficacy, perceived situational barriers and support. Self-efficacy to sustain behaviour change can further be divided into maintenance self-efficacy (coping self-efficacy) which represents optimistic beliefs about coping with maintenance barriers, and recovery self-efficacy to address the threats of lapses in behaviour that may occur.

The health belief model (HBM) focuses on attitudes and beliefs in order to explain health behaviour (Janz & Becker, 1984). The key variables of the model are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action (e.g. chest pains, wheezing etc.) and self-efficacy. Motivation for change depends on the degree of

perceived risk in conjunction with sufficient self-efficacy to achieve change. Without self-efficacy, perceived risk may result in defensive coping mechanisms such as denial or rationalisation, rather than undertaking positive behaviour change.

1.3. Chronic disease management and prevention

Unlike acute conditions, which are associated with short periods of illness, chronic conditions involve longer periods (i.e. 6 months or more). Bodenheimer, Lorig, Holman and Grimbach (2002) maintain that people with chronic diseases are their own primary caregiver and healthcare professionals should be the consultants that support them in this role of chronic disease prevention and self-management. They essentially take ownership and are responsible for their own healthcare. “Each day, patients decide what they are going to eat, whether they will exercise and to what extent they will consume prescribed medicines” (p.2470).

Self-management includes a combination of attitude, behaviour and skill that individuals direct towards the management of chronic disease (Lawn & Schoo, 2009). Lorig and Hollman (2000) believe that there are five key self-management skills that are required; (1) problem solving; (2) decision making; (3) available resource utilisation; (4) the patient/health care provider partnership; (5) active engagement. In order to effectively prevent and/or self-manage chronic disease, Lawn and Schoo (2009) suggest that an individual ought to:

- Have knowledge of the disease and self-management skills.
- Adopt a care plan in partnership with healthcare providers and/or significant others.
- Actively share in the decision making.
- Monitor and manage signs and/or symptoms of the disease.
- Management includes physical, emotional, occupational and social functioning.
- Adopt a lifestyle that focusses on prevention and early intervention.
- Have access to suitable support.
- Integrate social and cultural factors into the management process.

1.4. The biopsychosocial model as a framework for health-related wellbeing

The biopsychosocial model of healthcare was proposed by Engel (1980) as a scientific model to account for the missing dimensions from the biomedical model.

The biomedical model can make provision neither for the person as a whole nor for data of a psychological or social nature, for the reductionism and mind-body dualism on which the model is predicated requires that these must first be reduced to physio-chemical terms before they can have meaning (Engel, 1980, p. 536).

In contrast to the biomedical model, the biopsychosocial model considers the whole person. The model is conceptualised as a dynamic interaction between physiological, psychological, and socio-environmental factors in the promotion of wellness, rather than simply the absence of disease. The WHO's International Classification of Functioning (ICF) is a holistic view of health and functioning that is based on the biopsychosocial model (Fontes, Botelho, & Fernandes, 2014). Subjective wellbeing is conceptualised as being a combination of physical, psychological, social, and environmental factors (McDougall, Wright, & Rosenbaum, 2010). Hawks (2004) argues that a truly holistic and dynamic model for health needs to include a spiritual dimension. "Spiritual health represents purpose and higher meaning in life along with the value system that defines proper actions and the nature of relationships" (Hawks, 2004, p. 14). This model of holistic health is essentially an extension of the biopsychosocial model, that views physical, emotional, social, intellectual and spiritual health as components of a multidimensional health and wellbeing model.

Evidence suggests that the biopsychosocial model of rehabilitation delivers good outcomes across multiple domains of functioning. Hreha, Kirby, Molton, Nagata, and Terrill (2018) found that a biopsychosocial model of rehabilitation delivered significant improvements in physical activity, resilience, and social engagement. A randomised controlled trial by Allen et al. (2002) to investigate the effectiveness of stroke management post hospital discharge found that a biopsychosocial model that placed equal emphasis on physical and psychosocial health

delivered a significantly better profile of stroke prevention management for post-stroke survivors than that of the participants in the usual-care group. A longitudinal study examining health-related quality of life found that a biopsychosocial model of rehabilitation that focussed on multiple comorbid health conditions optimised the recovery process (Mayo et al., 2015).

Njoku (2015) maintains that health is not only the absence of disease but rather it is a notion of overall wellbeing. This requires illness prevention, health promotion, and illness management behaviours. This idea of wellbeing incorporates the maintenance of healthy lifestyle choices, positive coping behaviours, a spiritual balance, and adequate social support. Wellness-based interventions focus on modifying health-related behaviour prior to the onset of a chronic disease.

The Māori Health Model: Whare Tapa Wha is essentially a biopsychosocial model of health and wellbeing. It acknowledges the cultural context of indigenous health in New Zealand. The WHO recognises “the unique spiritual and cultural relationship between indigenous peoples and the physical environment. The rights of indigenous people to preserve their cultural heritage is fundamental to their health development” (Rochford, 2004, p. 45). The Māori Health Model: Whare Tapa Wha is a model of indigenous autonomy and empowerment developed by Durie (1994). The four cornerstones of health are taha tinana (physical), taha hinekaro (emotion), taha whanau (social) and taha wairua (spiritual). These four cornerstones of health are a good fit with the biopsychosocial model of wellbeing because health and wellbeing is considered in the context of the whole person (physiological, psychological, socio-environmental).

Bronfenbrenner (1986) maintains that biopsychosocial factors are subject to the influences of social dynamics: microsystems (family, work environment, friends etc), mesosystems (community, health systems, political influences etc), and exosystems (health insurance, physician training etc). He emphasises the importance of considering health in a social context, and the health of an individual is a mutually reciprocal transaction between the person and the environment. This is particularly pertinent to cultural constructs of health,

where political, social and environmental dynamics impact the health of indigenous cultures. In the context of Māori health, historical cultural disempowerment has disenfranchised Māori health, and indigenous constructs of wellbeing need to be incorporated into culturally appropriate primary prevention interventions (Durie, 1994).

1.5. Health and wellness coaching as a health behaviour change intervention

Health and wellness coaching (HWC) is a multidimensional psychological intervention intended to motivate individuals to undertake health behaviour change to achieve healthier lifestyles (Kivela, Elo, Kyngas, & Kaariainen, 2014). It is a partnership between the patient and the client, focusing on the whole person: mind, body, and spirit (Cohen, 2011). It also fits well within the biopsychosocial construct of health and wellbeing because it addresses the physical, psychological and social needs of the client. The aim is to improve self-management of lifestyle behaviour and maintenance of health and wellbeing (Wolever & Eisenberg, 2011). This strength-based approach explores the client's values and willingness to change behaviours, it examines the obstacles and strengths for change, and accomplishes these changes through goal setting (Huffman, 2009). Positive lifestyle changes are encouraged through education, support, motivation, and guidance. This health focussed intervention occurs by way of client enlightenment, empowerment, and ownership of their own health issues. The client must overcome ambivalence, and he/she is motivated to identify, prioritise, and manage risk factors in order to sustain healthy lifestyle choices.

Through a combination of counselling psychology, positive psychology, solution-focused therapy, and motivational interviewing, health and wellness coaches aim to: (1) build a trusting alliance with the client; (2) help identify strengths and coping skills; (3) enhance optimism and hope; (4) frame solutions; and (5) empower self-control and positive change (Mettler et al., 2014). According to Gordon, Salmon, and Gordon (2017), HWC programmes aim to help participants with the following: (1) adherence to evidence-based healthy lifestyle behaviours (e.g. regular exercise, healthy nutrition, weight management, stress management, smoking cessation, and sleep hygiene); (2) preventative care compliance (e.g. screenings,

tests, and immunisations); (3) chronic disease risk factor education; and (4) prescribed medication adherence.

Core competencies of health coaching (Huffman, 2016. p. 402).

- 50/50 client/provider partnership in the health coaching relationship
- Client engagement through motivational interviewing
- Guiding the agenda and goal setting
- Empathetic communication style
- Cultural competence
- Active listening
- Mindfulness
- Facilitating behaviour change
- Evidence-based interventions for wellness and prevention of chronic illness

HWC has been found to positively impact health behaviours and enhance wellbeing in patients with chronic diseases (Kivela, Elo, Kyngas, & Kaariainen, 2014). Their study found positive outcomes for physiological, behavioural, psychological, and social aspects of patients' lives after participating in health coaching. A systematic review of health coaching found that it was an effective intervention for a number of chronic diseases such as obesity, prediabetes/diabetes, prehypertension/hypertension, arthritis, cardiovascular disease, stroke, and cancer (Gordon, Salmon, & Gordon, 2017). A systematic review of the efficacy of health coaching on adult patients with chronic diseases found that health coaching produces positive outcomes for a patient's physiological, behavioural, psychological, and social life (Kivela, Elo, Kyngas, & Kaariainen, 2014). A study of patients with coronary heart disease found HWC significantly improved cardiovascular health amongst participants (Vale, Jelinek, & Best, 2003). A number of studies have found improvements in health behaviour such as fitness, nutrition, weight, stress, resilience, work efficacy, and health risks (e.g. smoking) after HWC intervention (Havenar, 2007; Wright, 2007; Appel, Clark, Yey, & Wang, 2011; Mettler et al., 2014; McGonagle, Beatty, & Joffe, 2014). Health coaching not only improved

health outcomes in a group of patients with chronic obstructive pulmonary disease, but also lowered moderate and severe symptoms of depression (Thom et al. 2018). Participation in wellness coaching was found to increase life satisfaction and quality of life (Mettler et.al, 2014; Clark, Bradley, & Jenkins, 2014). Clark et al. (2016) found that HWC was also effective for maintenance of positive health behaviours over time. These findings are consistent with those of Sharma, Willard-Grace, Hessler, and Bodenheimer (2016) in that improved health behaviours persisted one year after the completion of HWC. It is a cost-effective intervention and it can be delivered either in person and/or by telephone, and by medical or non-medical personal (Adams et al. 2013). Telephone based interventions found improvements in modifiable risk factors such as lowered LDL cholesterol levels, reduced tobacco use, improved dietary choice, reduced weight and BMI, and an increase in physical activity (Benson et al., 2018; Hammersley, Cann, Parrish, Jones, & Holloway, 2015; Coventry et al., 2019).

HWC is effective for targeting modifiable risk factors for individuals at risk of a first stroke. According to the New Zealand Guidelines for the Assessment and Management of Cardiovascular Risk (New Zealand Guidelines Group, 2003), people that are at more than a 10% five-year cardiovascular disease (CVD) risk are recommended to undergo motivational interviewing techniques for smoking cessation (if relevant), and adherence to a cardioprotective diet and regular exercise. Those at a 15% five-year CVD risk are additionally recommended to take aspirin, blood-pressure lowering medication, and statins. Research evidence has shown that motivational interviewing is an effective intervention for improving cardiovascular health amongst high risk individuals (Van Nes & Sawatzky, 2010; Thompson et al., 2011). HWC can also be applied as a secondary intervention post-stroke and was found to improve physical activity, diet, and medication adherence in people after a stroke (Gillam & Endcott, 2010; Barker-Collo et al., 2015).

CVD screening is employed as a primary prevention technique to identify individuals at risk of CVD. The Framingham Study is a longitudinal cardiovascular cohort study examining the effects of diet, exercise, and other risk factors on cardiovascular disease (Mahmood et al. 2013). PREDICT is a web-based clinical tool that is based on the Framingham study that predicts the five-year risk of a CVD occurrence. PREDICT is endorsed by the New Zealand

Ministry of Health for use by primary healthcare providers (Ministry of Health, 2013). It screens for CVD risk through a number of risk factors: age, gender, smoking, blood-pressure, cholesterol, diabetes, and previous CVD history.

Despite the fact that a large number of strokes are preventable (American College of Physicians, 1994), evidence suggests that individuals at risk of stroke fail to adequately control stroke risk factors. This leads to a high incidence of preventable strokes occurring (Lewis et al. 2010). A New Zealand based study by Faatoese et al. (2011) found poor rates of adherence to medications and healthy lifestyle choices amongst a cohort of rural Māori. Feigin, Norving, and Mensah (2017) suggest that a key strategy for stroke and CVD prevention is to effectively motivate at-risk individuals to sufficiently manage their own risk factors. Sullivan et al. (2008) suggest that prevention and education programs that target the perceived benefits, and self-efficacy of individuals at risk of stroke, are most efficacious at modifying health behaviour.

1.6. The PREVENTS study as a primary prevention for stroke and cardiovascular disease

Feigin et al. (2016a) maintain that current stroke prevention strategies are not always effective because of a lack of communication between healthcare organisations, clients and their families to help support lifestyle change and medication adherence. Rather, they suggest that raising awareness of stroke risk through education and support may better motivate individuals to modify their lifestyle choices.

The objective of the PREVENTS study, which was undertaken in 2017, was to explore the effectiveness of HWC as a cost-effective primary prevention intervention to reduce the modifiable risk factors of individuals at risk of stroke and CVD. HWC is a primary prevention strategy to educate, motivate, and support individuals at risk of stroke to change their health behaviour. Participants in the study were a multi-ethnic sample of 320 individuals (Māori, Pacific Island, New Zealand European, and Asian) with a five-year CVD risk $\geq 10\%$.

This cut-off figure puts people at a moderate to high risk of stroke in the next 5 years (Wells et al., 2017). Their CVD risk was calculated through the use of PREDICT, a web-based clinical tool used for calculating CVD risk (Wells et al., 2017; Mahon et al., 2018). Māori and Pasifika participants were eligible for inclusion at >30 years old (earlier stroke onset for these ethnic groups) and at >45 for other ethnic groups.

The primary outcome from the PREVENTS study was the 5-year CVD risk score at nine months post-randomisation. Secondary outcomes included: (a) self-reported adherence to medication, (b) self-reported 'readiness to change' medication adherence, (c) cardiovascular risk, (d) cardiovascular events, (e) the life satisfaction scale (SWL), (f) health related quality of life (HRQL) scale, (g) changes in participant's expectations of treatment benefits, (h) mood (PHQ9), (i) participant satisfaction with treatment, and (j) resource consumption and cost-effectiveness at 12 months post-randomisation (Mahon et al., 2018). The PREVENTS study will be further discussed in the Methodology section.

1.7. Health-related quality of life and health coaching

Definition

The health-related quality of life is a subjective and personal evaluation of an individual's own health status (Ware, 2003). The WHO describes it as a state of complete physical, mental, and social wellbeing (WHOQOL Group, 1993). Health-related quality of life is a subjective measure of wellbeing among a number of domains: physical health, psychological health, level of independence, social relationships, environment, and personal values/beliefs (Guyatt, Feeney, & Patrick, 1993). It is the difference between ideal function and post-organic disease function. (Serda et al., 2015).

HWC and quality of life outcomes prior to chronic disease

Evidence from the poor outcomes of post-stroke survivors suggests that primary prevention interventions, such as HWC, that aims to modify health behaviours prior to the occurrence of a first stroke, is an important strategy to ensure that the quality of life of at-risk individuals is improved, and not further compromised by experiencing a first stroke. Unfortunately, there is a shortage of literature examining the quality of life of individuals at risk of a stroke, in particular, that have undertaken HWC. Evidence from a number of health coaching interventions targeting individuals at risk of chronic disease supports the proposition that primary prevention strategies are important for improving well-being outcomes of patients. Rehman, Karpman, Vickers-Douglas, and Benzo found that a motivational interviewing-based health coaching intervention delivered improvements in dyspnea (laboured breathing) and critical aspects of health-related quality of life in patients with coronary obstructive pulmonary disease (COPD). Participants experienced reduced rates of re-hospitalisation and their utilisation of healthcare services was lowered. Studies on the efficacy of health coaching has found significant improvements in maintenance of healthy lifestyles and enhanced wellbeing for participants in health coaching interventions. Health coaching produced positive effects on physical, behavioural, psychological, and social aspects of their lives (Kivela, Elo, Kyngas, & Kaariainen, 2014; Cinar & Schou, 2014; Wolever & Eisenberg, 2011) whilst increasing wellbeing after health coaching (Edman, Galantino, Hutchinson, & Greeson, 2019).

Quality of life outcomes post-stroke

Most of the previous literature has examined quality of life outcomes post stroke. Without primary prevention to target individuals at risk of stroke, quality of life outcomes can be debilitating for stroke survivors. Stroke has a significant impact on the quality of life of individuals post-stroke because of limitations such as mobility, physical and cognitive functioning, mood, and social isolation. Previous research has found mixed results in quality of life post-stroke. Some have found significant disruptions (Hochstenbach, Anderson, van Limbeek, & Mulder, 2001), whilst others have found little disruption (Hackett et al., 2000). A

study by Niema, Laaksonen, Katila, and Waltimo (1988) examined the quality of life for stroke survivors in terms of four domains of life (working conditions, home activities, family relationships, and leisure activities). The results showed that 83% of patients reported that their quality of life had not been restored to previous levels. A recent study by Serda et al. (2015) found that stroke patients have a significantly poorer quality of life than the general population. This was not only due to poorer emotional states and reduced physical ability, but also as a result of gender (female) and poorer education. Similar findings by Feigin et al. (2010) found an association between depression, being female, and quality of life in five-year post-stroke survivors. Anxiety and depression are common after stroke and negatively impact adjustment, rehabilitation, and quality of life (Mukherjee, Levin, & Heller, 2006). It is suggested that early diagnosis and treatment of depression is vital for post-stroke patients in order to improve their quality of life. Psychological factors such as helplessness and passive coping were found to be important predictors of poor quality of life outcome trajectories after stroke (Van Mierlo et al., 2018). Kim, Warren, Madill, and Hadley (1999) found that the most important predictors of quality of life post-stroke were depression, marital status, quality of social support, and functional status. The evidence from these findings once again highlights the importance of implementing primary prevention strategies, such as HWC, before individuals experience a first-ever stroke and a compromised quality of life thereafter.

The benefits of HWC on quality of life

Motivational interviewing is a core feature of HWC. Studies have found that motivational interviewing enhanced quality of life for individuals at risk of CVD (Reichman, Karpman, Vickers-Douglas, & Benzo, 2017), type 2 diabetes mellitus (Li, Li, Shi, & Gao, 2014) and obesity (Freira et al., 2019). Dayan, Pereira-Lancha, Luciana, and Antonio (2018) found that HWC for obesity resulted in positive behaviour changes and improvements in self-rated quality of life amongst participants. A single-cohort study design found that HWC was associated with improvements in important areas of psychosocial functioning such as quality of life, mood, and perceived stress (Clark et al., 2014). They maintain that quality of life encompasses both physical and mental health, and includes social, emotional, physical, cognitive, and spiritual domains. Wellness and quality of life are similar concepts, according to Clark et al. (2014). It is not only an absence of suffering or disease but also includes

happiness, meaning and purpose in life, and having a community of support. Quality of life is associated with healthy lifestyle and positive health behaviours. Evidence from the results of HWC for adults with prediabetes found that it was an effective strategy to enhance self-care behaviours to prevent the onset of full-blown diabetes, whilst also enhancing their quality of life (DeJesus et al., 2018). A 12-week intervention resulted in improved lifestyle behaviour, such as increased physical activity and healthy eating. The effects were sustained at 24-weeks. The same study also found that self-efficacy and quality of life improved with HWC.

1.8. Life satisfaction after health coaching

Definition

Sousa and Lyubomirsky (2001) define life satisfaction as “a contentment with or acceptance of one’s life circumstances or the fulfilment of one’s wants and needs for one’s life as a whole” (p. 667). Diener (1984) believes that it is one of the main components of subjective wellbeing. Tate and Forchheimer (2002) believe that life satisfaction is but one domain of an overall quality of life. Other domains include wellness, morale and happiness.

According to Hampton and Marshall (2000), perceptions of life satisfaction for individuals with neurological conditions varies according to cultural health beliefs. Life satisfaction was found to be higher amongst Americans with spinal cord injury when compared with Chinese patients with the same injury. Unfortunately, there is a lack of research on life satisfaction outcomes for individuals who are at risk of stroke and that have participated in HWC. The majority of previous studies have examined life satisfaction post-stroke. A number of variables were found to impact upon life satisfaction post-stroke and include social support and social network, cognitive and physical disabilities, and depression (Astrom, Adolfsson, Asplund & Astrom, 1992). Vestling, Tufvesson, and Iwarsson (2003) found an increase in life satisfaction amongst post-stroke individuals who were able to return to work. A study by Ostwald (2008) reported lower life satisfaction amongst stroke survivors and their spousal caregivers than the general population. In a study of post-stroke patients, Van Mierlo et al.

(2015) suggest that rehabilitation should focus on promoting adaptive illness cognitions in order to enhance life satisfaction. This evidence reinforces the necessity for primary prevention interventions that modify at-risk health behaviours, prior to the onset of a first-ever stroke, in order to ensure that life satisfaction is improved or maintained, and not compromised by a stroke.

HWC and life satisfaction outcomes

According to Diener and Chan (2011), happy people live longer. High subjective wellbeing, such as life satisfaction, positive emotions, optimism, and an absence of negative emotions causes better health and longevity. Sears, Coberly, and Pope (2016) investigated the effects of a telephone based HWC programme on health behaviour, life satisfaction, and optimism. Telephonic HWC was found to be significantly associated with positive changes to health behaviour, life satisfaction, and optimism, when compared with those who did not participate in the coaching. Research on patients with cardiovascular disease risk found that those with higher levels of physical activity and lower obesity experienced greater satisfaction in life (Baumann, Tchicaya, Lorentz, & Le Biham, 2017). This suggests that HWC programs that promote good health behaviours may be an effective intervention for increasing outcomes such as life satisfaction for individuals at risk of chronic diseases.

1.9. Summary of the background literature

Evidence to date shows that the global incidence of stroke is high. Although mortality rates for stroke have reduced, disability from stroke has increased and presents a significant burden on health-care provision (Feigin et al., 2018). The high incidence of stroke in New Zealand, when compared to other developed countries, and the increased rates of stroke amongst Māori, Pasifika, and Asian populations (Feigin et al., 2006), suggests that interventions that target modifiable health-risk behaviours, may reduce the incidence of a first stroke, whilst significantly reducing the burden of care and cost to the healthcare system. HWC in the

PREVENTS study is a health-related behaviour change intervention to educate and motivate individuals at risk of stroke and CVD to take personal responsibility for their own health behaviours and lifestyle choice (Mahon et al., 2018).

Outcomes from previous HWC interventions have found compelling evidence that modifying lifestyle choices improves health-related outcomes for those at risk of chronic disease and also increases wellbeing (quality of life and life satisfaction) amongst these individuals (DeJesus et al., 2018, Sears, Coberly, & Pope, 2016). With regard to stroke though, research has primarily examined the wellbeing outcomes of post-stroke survivors and as such, additional research is necessary to examine wellbeing outcomes of at-risk individuals of stroke that have undertaken HWC, in order to protect against a first stroke occurring. Motivating individuals at risk of a stroke to change their health-related behaviours prior to the onset of a stroke, will not only enhance their health, but will reduce both the economic cost and burden of care to the healthcare system. The aim of this research is to explore the impact of HWC on the health and wellbeing of individuals that participated in the PREVENTS study, 2-3 years post study. The research will examine from a qualitative perspective, the subjective experience of HWC for participants. It will also examine how HWC has impacted upon wellbeing outcomes such as quality of life and life satisfaction for participants. Finally, it will explore what factors attributable to HWC may be determinant of sustained wellbeing outcomes for participants.

Chapter 2

Methodology

2.1. Description of the PREVENTS parent study

The PREVENTS study was undertaken in 2017. It was designed as a parallel, prospective, randomised, open-treatment and single-blinded end-point trial (Mahon et al., 2018). Participants were recruited via primary health care organisations and GP practises. Individuals were excluded if they: (a) were unable to speak English; (b) had experienced a previous stroke or heart attack; (c) had significant impairments or medical conditions preventing participation; (d) were unable to provide informed consent; (e) were receiving treatment that could contaminate the study; (f) were deemed inappropriate as a participant by their GP; (g) and had clinical depression on the Patient Health Questionnaire (PHQ-9 score >18). Individuals who met inclusion criteria and provided written informed consent were eligible to participate in the trial. Randomisation was either to HWC or to usual care groups. Stratified minimisation randomisation was employed to balance age, sex, CVD risk, and ethnicity factors between groups. The outcomes of the HWC group were compared to the usual care group. All participants received assessments at baseline, 3, 6, 9, and 12 months. Assessments examined physical and mental well-being dimensions, stress, quality of life and life satisfaction. At nine months, participants also had a physical examination for blood pressure, weight, waist circumference, and a blood test was taken. Participants were additionally invited to a longer-term follow-up, two to three years after randomisation, to study the long-term maintenance of behavioural changes. The participants for the qualitative interviews for this study were recruited from this sample.

Participants who were allocated to the HWC intervention received 15 coaching sessions. Trained HWC coaches delivered 12 sessions, twice per week, and the remaining sessions

were provided monthly. Coaches were trained over six weeks in the International Coach Federation's (ICF) core competencies and in cultural competency. Coaching for participants involved a combination of in-person (first two sessions and last session) and telephone or in-person for the remaining sessions. Initial sessions lasted one hour, while later sessions were reduced to thirty minutes. Coaching sessions were designed to allow for the attendance of whānua/family support. Research had previously found that lifestyle and medication change/adherence might fail without social support (Petosa & Smith, 2014). The coaching sessions employed a number of health risk assessment tools (circle of life tool, a focus on positives and strengths, values and readiness for change) and goal setting strategies (wellness map, illness/wellness continuum, goal triangle, dreams and visions of self). SMART (specific, measurable, action-based, realistic, and time-bound) goals were implemented for each participant, assessed by a self-talk diary, and reviewed at each session. The usual care group did not receive the HWC intervention.

The primary outcomes were statistically analysed using linear regression and/or generalised linear models. A blind review was also carried out to confirm the statistical methods for data analysis. Additionally, analysis of ethnic sub-groups (Māori, Pacific Island, New Zealand European, and Asian) was carried out using models of group interaction with a treatment arm. The primary outcome of the study was the 5-year CVD risk score, recalculated using PREDICT, at nine months post-randomisation. Secondary outcomes were to evaluate the effectiveness of HWC coaching on a number of dimensions such as adherence to medication, readiness for lifestyle change, cardiovascular risk, life satisfaction, and quality of life, mood, treatment expectations, participant satisfaction, and cost effectiveness of the intervention. As part of the outcome measures, qualitative interviews were carried out with a subsample of study participants to explore the experience of wellbeing, quality of life and life satisfaction, post-participation in the study.

2.2. Rationale for the study

Numerous studies have investigated health-related behaviour change and their outcomes amongst post-stroke survivors (Morris, Oliver, Kroll, & Macgillivray, 2012; Gillham &

Endacott, 2010; Weiss, Suzuki, Bean, & Fielding, 2000), but there is limited research examining wellbeing outcomes for individuals, who are at risk of stroke or a CVD event, and have participated in a health behaviour intervention, prior to experiencing a first stroke or CVD event. The PREVENTS study targeted people identified as being at risk of a first CVD event and/or stroke, and health-related behaviour modification was intended to prevent such an onset. Health coaching has been found to be effective for primary prevention of chronic diseases (Kivela, Elo, Kyngas, & Kaariainen, 2014), but very little research has investigated the long-term persistence of health coaching benefits (Sharma, Willard-Grace, Hessler, Bodenheimer, & Thom, 2016). Olsen and Nesbitt (2010) also call for more qualitative research on health coaching in order to examine the outcomes in terms of the perspectives and experiences of the patients. Furthermore, Finn and Watson (2017) call for ongoing investigation to determine which components of HWC are most effective for behaviour change.

2.3. Research questions

This research was undertaken to investigate the impact and persistence of health and wellness coaching on the lives of participants in the PREVENTS study, 2-3 years post randomisation. The research aims to:

1. Explore how participants make subjective meaning of the experience of health and wellness coaching.
2. How health and wellness coaching had impacted their wellbeing, their quality of life and life satisfaction, after participating in the study.
3. What factors attributable to health and wellness coaching were determinant of positive and sustained wellbeing outcomes.

2.4. Philosophical stance

Phenomenology is a form of qualitative research that focuses on the examination of an individual's lived experience in the world (Neubauer, Witkop, & Varpio, 2019).

Phenomenology was developed as a philosophy by Edmund Husserl (1859-1938) and provides a framework for qualitative research methodology. It is a philosophical method of inquiry within a humanistic research paradigm (Denscombe, 2003). Phenomenology is able to develop insights from the perspectives of the lived experience of individuals. “Only those who have experienced phenomena can communicate them to the outside world” (Todres & Holloway, 2004, p. 164). Phenomenology is “interested in human consciousness as a way to understand social reality, particularly how one thinks about experience” (Hesse-Biber & Leavy, 2011, p.19). From an epistemological standpoint, phenomenological approaches are grounded on a paradigm of personal knowledge and subjectivity which emphasises personal perspective and interpretation. It answers questions of meanings, gains insights into people’s motivations and actions, and their subjective experiences (Lester, 1999). Phenomenology attempts to set aside biases and preconceived assumptions about human experiences.

Transcendental phenomenology is “a scientific study of the appearance of things, of phenomena just as we see them and as they appear to us in consciousness” (Moustakas, 1994, p. 49). It is a discovery of the true essence and meaning of things. Through acts of reflective attention, we are able to attend to the lived experience and true meaning of phenomena (Moustakas, 1994). The ontological assumption of transcendental phenomenology (Husserl 1859-1938) is that reality is internal to the knower and is what appears in their consciousness. The epistemological assumption postulates that the observer must separate him/herself from the world in order to reach the state of transcendental ‘I’. The observer is bias-free and understands phenomena by descriptive means. Descriptions of experiences are obtained through one-on-one interviews, which are then transcribed and analysed. Themes and meanings emerge from the data, which allows the experience to be understood (Moustakas, 1994).

2.5. Ethical considerations

Ethical approval for the research was provided by Northern Regional Ethics Committee for experiments in human subjects (HDEC reference: 13/NTA/17/AM02 – Primary prevention of stroke in the community; see Appendix A) and AUT University Ethics Committee (AUTEC

reference: 16/174 – Primary prevention of stroke and cardiovascular disease in the community; see Appendix B).

Ethical principles of informed consent, anonymity, confidentiality, and cultural considerations guided the research process. Informed consent forms, recorded interviews and transcribed data were stored securely with the researcher and given to the research supervisor at the conclusion of the study (stored on a password protected AUT One Drive account). Each participant was de-identified and assigned a participant registration number according to their participation in the PREVENTS study so as to retain privacy and anonymity. Participants were free to withdraw from the study at any time of their choosing, without any form of penalty being incurred (no participants withdrew).

2.6. Participants

Participants in this research had all previously participated in the original PREVENTS study. Participants who had initially participated in the PREVENTS study had been recruited through primary health organisations and GP practices that used the PREDICT tool to calculate CVD risk (absolute five-year CVD risk $\geq 10\%$). A subsample of these participants were recruited to participate in follow-up interviews, 2-3 years after the PREVENTS study. Eight participants were recruited for this study. The researcher was provided with a list of potential participants by a PREVENTS researcher who was also the primary supervisor of this study. Participants were contacted by telephone and if they agreed to participate, they were posted an information sheet and consent form to complete (Appendix C), prior to participating in a one-on-one interview. All consented to participate in the study. The researcher met with each participant in person (6 at their own residence, one at their workplace, and one at a coffee shop). The advantage of conducting in-person interviews is that verbal and non-verbal cues (e.g. body language, facial expression etc) are likely to be captured (Rahman, 2015). During each interview notes were taken to generate initial meanings and understandings of the experience from the perspective of the participants. At the conclusion of each interview, the participant was given a koha (gift) of \$20 voucher for participating in the study.

2.7. Demographics of participants

Table 1

Demographics of participants (n = 8).

Characteristic		<i>n</i>
Gender	Male	5
	Female	3
Age (M=64, SD=4.99)	50-59	1
	60-69	6
	70-79	1
Identified ethnicity	Indian	1
	NZ European	2
	Cook Island	1
	Māori	4
Study ethnicity	Asian	1
	NZ European	2
	Pasifika	1
	Māori	4
Relationship status	Married	3
	Single/divorced/widowed	5
Employment status	Working	5
	Not working/retired	3

2.8. Research Approach

A phenomenological qualitative research methodology was employed in order to investigate the lived experience of participants 2-3 years after the PREVENTS study. One-on-one interviews were conducted with participants and thematic analysis was undertaken to analyse the data. Qualitative research methods are diverse, complex and nuanced, and allow the researcher to access personal perspectives and subjective interpretations of participants (Holloway & Todres, 2003). It allows for insight into how participants make meaning of their lived experiences. Thematic analysis was used to analyse the data. Thematic analysis is a foundation method for qualitative research across a wide range of theoretical and epistemological approaches (Braun & Clarke, 2006). It is a method for identifying, analysing and reporting patterns of common information (themes) within data, which is highly flexible, and useful for summarising key points in a large body of data. It allows the researcher to make sense of shared meanings and experiences (Braun & Clarke, 2012). As well as allowing for ‘thick’ description of the data set, it highlights similarities and differences within the data, it allows for theoretically informed and emergent interpretations, and most importantly, it can generate unanticipated insights (Braun & Clarke, 2013). Thematic analysis is not bound by particular theoretical frameworks and as such, can be used to analyse a range of different theoretical frameworks (Braun & Clarke, 2006).

2.9. Research Procedure

One-on-one interviews were carried out and recorded with the permission of the participants. Interviews ranged from 25 minutes to 42 minutes. A total of 214 minutes of interview data was recorded.

Prior to conducting the interviews, the researcher participated in a bracketing dialogue with an individual with expertise in qualitative research methods (D. Green, personal communication, 28 May 2019). According to Dale (1996), bracketing allows the researcher to explore potential biases and presuppositions about a subject. Bracketing, or epoché, is used

in phenomenological research to identify taken-for-granted assumptions and usual ways of perceiving (Lester, 1999), so that “no position is taken either for or against” (Lauer, 1958, p. 49). The challenge is to describe the immediate experience without being “obstructed by pre-conceptions and theoretical notions” (van Manen, 1997, p. 184). The researcher did a personal audit to explore his own beliefs, attitudes, and perceptions about the difficulties and challenges of health-related behaviour change, any perceived ethnical, and cultural biases, and how this may relate to different demographic populations within New Zealand. Potential biases explored were (a) perceptions of CVD and stroke, as the researcher had a family history of both chronic illnesses; (b) personal perceptions of health-behaviour modification, as the researcher had personally experienced a pulmonary embolism some years previously; (c) perceptions of culture and ethnicity, as the researcher was a European male immigrant from South Africa; (d) perceptions of socio-economic status, as the researcher was a middle-class, Westernised, post-graduate educated individual. From this process, potential biases, assumptions and interpretations were identified. These were cross-referenced against the interpretations of the data during analysis. Any perceived biases were also discussed with the research supervisor.

To find a balance between flexibility and structure, a semi-structured interview guide was developed to guide the interview process. The interview posed a set of questions to encourage participants to describe their lived experience and facilitated the development of a constructive relationship between the researcher and the participant (Eatough & Smith, 2008). The interview template covered a number of aspects of health behaviour change and how this applied to their lived experience of quality of life and life satisfaction 2-3 years after participation in the PREVENTS study. Notes were also taken during the interview and used as prompts to guide follow-up questions, and to explore various points of interest in more depth. The questions covered the following aspects:

1. Their experience of life prior to participating in HWC.
2. Their experience of participating in HWC.
3. Their experience of health-related behaviour modification from HWC.
4. Their experience of life after HWC.
5. Their perception of quality of life and life satisfaction after HWC.

6. Daily behaviour to enhance quality of life/ life satisfaction after HWC.
7. The most significant life changes after HWC.
8. The greatest challenges of life change after HWC.
9. Most satisfying aspects of life change after HWC.
10. Future life vision and goals after HWC.
11. Any additional comments about the HWC experience.

After completion of each interview, notes were made by the researcher to capture initial thoughts about each participant and observations of body language (verbal and non-verbal data). The interview data was transcribed verbatim for analysis. The researcher listened to each interview and read through each transcription a number of times, using a notebook for thoughts and ideas that emerged from the interviews. A personal profile of each participant was developed by the researcher in order to build a biopsychosocial understanding of the participant (physical activity, working and/or living environment, family and social connections, spirituality etc.). The transcripts were printed out and coded manually (pencil and highlighter pens), and notes were made in the margins, line-by-line. Parts of the transcript that were identified as being significant (words and phrases) were highlighted and the question was asked, “How does this relate to the lived experience of participation in the study and how do participants make meaning of this experience? Is this as a result of my own bias, or is there another explanation here?” The goal was to identify patterns of descriptions that reflected important aspects of the lived experience of life during and after HWC. Patterns of descriptions with similar meanings were grouped into themes. Initial raw themes were further sorted into lower (sub) themes and higher order (main) themes.

The researcher was guided by the recommendations of Braun and Clarke (2000) on how to conduct thematic analysis. The following steps were followed:

1. Transcription: The data was listened to repeatedly whilst the transcription process was undertaken. The transcribed data was checked against the recorded data. This allowed the researcher to develop a strong familiarity with the data.

2. Coding: Each data item was given an equal amount of attention. A list of initial ideas about the data was generated and then the entire data set was coded by highlighting potential patterns and meanings. Coding was carried out a number of times until a point of data saturation had been attained. The initial list of codes was sorted into potential themes.
3. Analysis: Mind maps and diagrams were drawn up to help visualise the connections between raw themes, sub-themes and main themes. Coded data was triangulated against the initial notes that the researcher had made after each interview, and against the personal profile that was developed about each participant. Data was ‘made sense of’ – rather than just paraphrased and described. The aim of the analysis was to tell an organised story about the data and topic. A final re-reading of the data, recoding and regrouping of the themes was undertaken to explore latent meanings embedded within the data. Final themes were then generated. As such, themes did not just ‘emerge’ – the researcher was ‘active’ in the research process.

Qualitative research endeavours to ensure ‘trustworthiness’ as the method to ensure validity and reliability. The researcher was guided by the recommendations of Noble and Smith (2015); (a) Validity (truth value) was ensured by recognising that multiple realities exist, the researcher clearly and accurately presents participants’ perspectives, and accounts for potential methodological bias. A reflective journal was maintained, bracketing and researcher supervision was undertaken to account for potential biases; (b) Reliability (consistency) was addressed by providing a transparent and clear description of the research process. A research diary was maintained to document challenges and issues of research cohesion. This form of audit trail meets with the requirements for dependability in qualitative research (Thomas & Magilvy, 2011). Emergent themes were discussed with the research supervisor so that assumptions could be challenged, and a consensus achieved; (c) Generalisability (applicability) was achieved by giving consideration as to whether the findings could be applied to other contexts, settings or groups.

Chapter 3

Findings

3.1. The interviews

The interviews revealed a number of outcomes for participants, 2-3 years after participating in HWC. Four of the participants attributed the health coaching to being instrumental in facilitating lifestyle change. The supportive and guiding role of the coach motivated them to take ownership of their own health and lifestyle choices. They changed their health behaviours in numerous areas of their lives (exercise, diet, smoking, alcohol consumption, stress, working environment, social relationships, medication adherence etc) and experienced a better quality of life in terms of physical, psychological, and social outcomes. The experience of enhanced wellbeing in their lives further motivated them to maintain an ongoing healthy lifestyle. A further participant had made a number of positive gains in her life from HWC, particularly in terms of her mental health, but admitted to struggling with motivation without the ongoing support of the coach. These participants all complemented the role of the coaches in bringing about lifestyle transformation and reported that HWC had been a positive experience in their lives. Another participant claimed to have been using the tools and skills that HWC teaches for many years already, prior to participating in the coaching. He maintained that the coaching simply validated everything that he had been trying to achieve all along to manage his health issues. He still had a significant health issue and was critical of the medical interventions that he had experienced in the past to address the problem. He had a number of fixed health beliefs and was resistant towards some possible health behaviour changes that may have improved his health. The final two participants claimed to have experienced some positive outcomes from the coaching, but environmental challenges and motivation difficulties had been a barrier to significant lifestyle change.

3.2. Themes

The raw themes were merged into sub-themes. The following sub-themes and main themes emerged from the analysis of the data:

1. Shifting the thinking
 - a. Gaining new insight
 - b. Motivation for change
2. Supporting relationships
3. Making a lifestyle change
 - a. Taking control
 - b. Believing in yourself
4. Living a transformed life
 - a. Living a fulfilling life
 - b. The ripple effect of change
5. Barriers to lifestyle change

Table 2

Hierarchical development of themes.

<i>Raw themes</i>	<i>Sub-themes</i>	<i>Main themes</i>
Catalyst for change Becoming self-aware Gaining new knowledge Reframing beliefs Expectations for change Encouragement to change Willingness to change	Gaining new insight Motivation for change	Shifting the thinking
Support from the coach Support from others		Supporting relationships
A new way of living Taking responsibility A new vision of health Challenging yourself Changing your attitude Positivity and optimism Setting new goals	Taking control Believing in yourself	Making a lifestyle change
Seeing the benefits Feeling good about yourself Looking to the future Multiple life changes Relationship growth Spiritual support Post-change growth Manaaki Supporting others	Living a fulfilling life The ripple effect of change	Living a transformed life
Personal barriers Environmental barriers		Barriers to lifestyle change

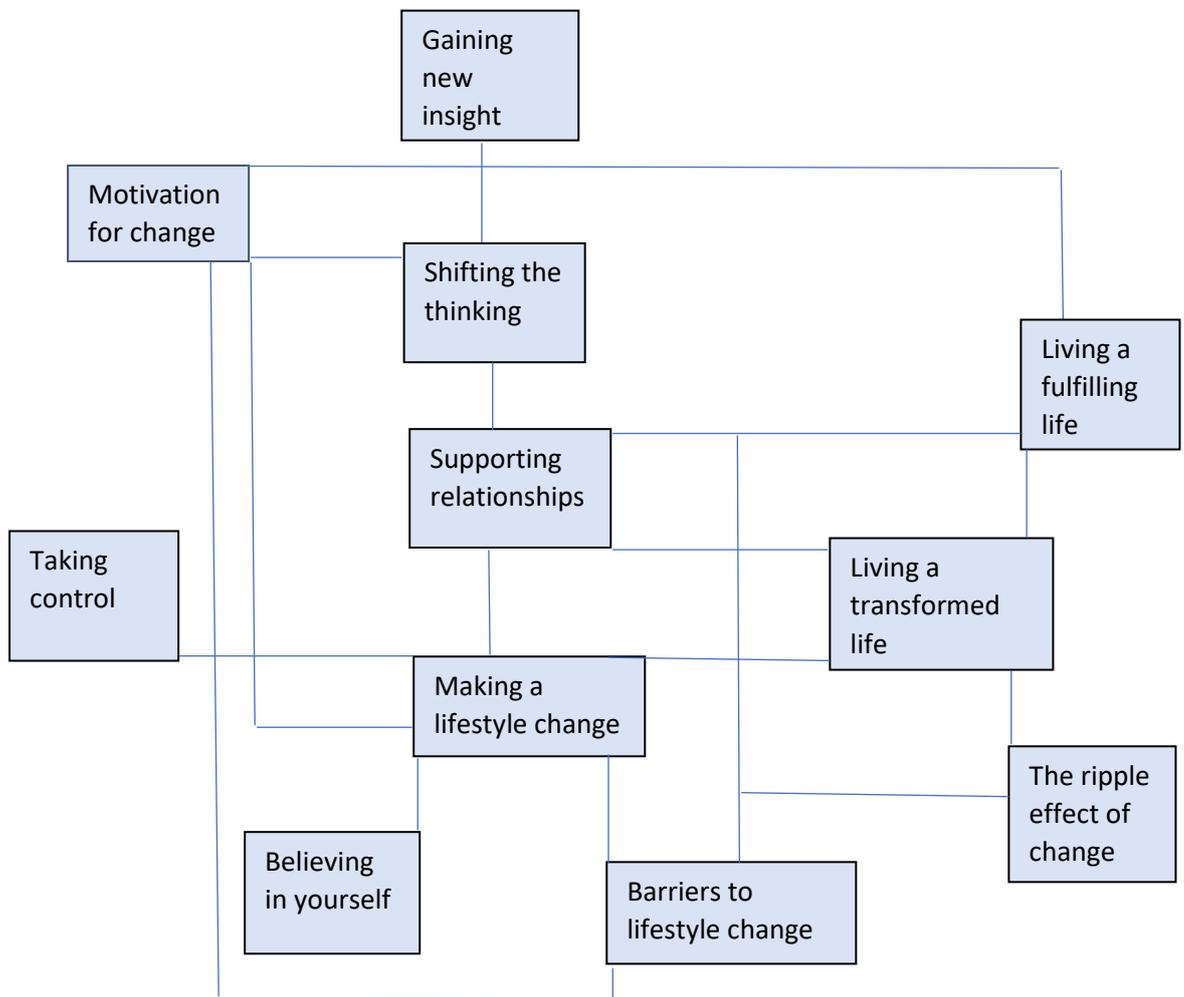


Figure 1. Thematic mind-map.

3.3. Shifting the thinking

Participants reported that an incentive and/or catalyst for change needed to take place for lifestyle transformation to occur. Most participants found that becoming self-aware about lifestyle choice, coupled with health education provided by the coaches to enhance their knowledge about healthy lifestyle choices, was essential to change their thinking about health behaviours. Reframing core beliefs, values and attitudes about health change helped to enhance their motivation and commitment to change. Participant 132 discussed his experience of deciding to enrol in HWC:

Well the doctor told me, “You better go in, enrol yourself”, and I thought that it’s better to be involved because there was going to be some benefit, you see. I think because of that I think I am blessed that I have joined, and it helped me to some extent. What I want to say is that they have given me the health I am in now, you see.

a. Gaining new insight

The initial experience of HWC was, for the majority of participants, the realisation that they were living a lifestyle that was problematic for their long-term health. Becoming aware of their health issues and the future risk to their health was an important catalyst for choosing to engage in HWC and embark upon a path to a healthier life. Gaining awareness was an important starting point for change. *“I’d just become more aware that I’ve got to find some way of pulling the blood pressure down. I now make sure all the unhealthy things that I used to tolerate and let go by aren’t there anymore”* (Participant 239).

Participant 218 reflected upon how his awareness of previously poor lifestyle choices had influenced his desire to change his health behaviours:

Because I used to have friends in the neighbourhood, “Let’s get pissed”. So, “Let’s pull out the guitar”, we have a sing song and this type of fun. It’s a temporary fix, but you wake up in the morning, still got the same problem but with a hangover. I needed

to do something because I was starting to feel just weak, lacking energy and motivation and desire.

A growing awareness of a need for lifestyle modification was also described by Participant 132:

Well, I was going down, let's be honest about it, and I was going down in the sense that I was wondering what is happening. I think I am not as bright or as well as before, you know.

A lack of awareness of healthy lifestyle choices and attitudes and beliefs about health was mentioned as a reason for previous poor health choices:

Before. Wake up on the weekend, turn on the TV, yeah. Well, I had that mentality, "That's what I have a car for. Why walk to the shops?" Because that's the purpose of a car, and no one had sort of taught or educated me or said, "Try walking. The shop's only over there". I'd go, "Why?". I had this kind of mentality and behaviour. (Participant 218).

Participant 60 described her lack of awareness as simply just taking her health for granted:

I think it was probably like BAU, business as usual. You just do things as a shift worker. I was looking after myself the way that – you know, like my meals were out of sync and yeah, before, if I felt like hot chips on my way home, I'd have hot chips. It was about getting myself into looking after myself; self-care.

Not only was health awareness an important factor for choosing to embark upon lifestyle modification, but participants also emphasised the need to remain self-aware, in order to remain committed to maintaining ongoing healthy behaviours:

It's the nutrition and sleep that I need to be aware of. I really struggle with eating properly and I know that for my mental health and physical health I need to be eating

properly, but I'm aware, so I consciously try to make better decisions about food.
(Participant 330).

The knowledge and awareness gained by participants from the health education provided by the coaches played a substantial role in providing new insight into lifestyle choice:

I found I was more aware in terms of my health and for the sake of being more proactive around my day-to-day wellbeing. So that was an awareness I would have taken for granted if I wasn't on the monitoring. I think overall it was a good experience for that reason and knowing that, particularly for us Māori, we have to be more aware of, yeah, the things that are going to make things better for all of us
(Participant 60).

Participant 239 found that the health education provided by the coaches positively reinforced the health choices that he had already been committed to undertaking, prior to the coaching intervention:

The approach from the ladies – they made me revisit it again and have another look. I'm always searching anyway, but to discuss it with someone else, it helped a lot in that I got other opinions on what I was thinking. It's been an update of awareness and maybe I can refine it.

The knowledge that HWC has provided, has made Participant 60 more attentive to her health status, ensuring that she is proactive about taking personal agency for any health concerns she may have. *“It's just knowing more about my physical health and wellbeing. If I have a palpitation or something like that, it's straight up to the doctors. Just an awareness that, yeah”*. Participant 330 summed up her experience of the value that the education and knowledge HWC had provided for her. *“If I'd had coaching earlier and learnt to deal with things I may not have had to put up with so much for so long.”*

b. Motivation for change

The knowledge and awareness gained by the participants through HWC was instrumental in changing some previously entrenched beliefs and attitudes to health and motivating participants to undertake change. *“So, there was very much a change in the way I was thinking, you know, because at the end of this I’m looking after my health in the long term”* (Participant 60). Participant 60 believes that the most important factor for lifestyle modification is a willingness to want to change her health behaviours. *“Firstly, I had to want to do it, it wasn’t for any particular reason, but I guess it was just the time. I just decided, well, you know, you’re getting too old for this behaviour.”* The importance of a willingness to change was echoed by Participant 114. *“As long as there’s a willingness to change, there’s a way.”*

The following dialogue between the researcher and Participant 218 reflects the importance he now places on positive motivation and attitude for lifestyle change:

Participant 218: *“I need to wake up!”*

Researcher: *“So, you’re saying that you are feeling motivated?”*

Participant 218: *“Yeah.”*

Researcher: *“Why is that so?”*

Participant 218: *“Because now I want to wake up, because now I want to go to work.”*

Researcher: *“It sounds to me like you are satisfied with your progress.”*

Participant 218: *“Yeah, but I can still improve.”*

Researcher: *“Super. So, what do you think is the most important change you think you’ve made after doing the coaching?”*

Participant 218: *“My attitude.”*

In order to become motivated to undertake a lifestyle change, Participant 114 believes that it was important for him to reframe his attitude and expectations. Not only did he have an ongoing CVD risk, but he had also recently undergone a limb amputation:

I have a different outlook on life. I don't ...every time I see obstacles, every time I see challenges, I know there's a way around it, I know I can handle that. It might take me a bit longer than normal, but I can do it.

Participant 132 described how, prior to HWC, he had struggled to maintain motivation for physical activity with his CVD difficulties:

I used to go for a walk every afternoon, physical activity for one hour at least and then I stopped when I was having that issue, you see, I tried to continue, and I continued for a while, and stopped again.

HWC has been instrumental in helping him change his attitude and become motivated again:

It's more of a mind thing. I say to myself, "No, no you are not sick, you'd better do what you are doing, you know, do a bit of gardening, go for a walk and go and meet your friends and have a chat and run away from these four walls from time to time", you know.

The importance of family connections was found to be a significant motivator for change:

The joy of seeing the kids. I believe they gave me the inspiration to push forward. I realised that most of these goals I'm setting, they're all focussed ahead at a time I'm going to spend...quality time I'm going to spend with them. That's what motivated me a lot in that way (Participant 114).

I've got two daughters. Anyway, they encouraged this type of participation because they know that if I am part of these programmes, there's hope for them. I'd like to see them next year, and it's important, I'd like to see them when they get to the age of 21 (Participant 218).

3.4. Supporting relationships

Support was consistently found to be a core theme for the behaviour change process to be successful. The support from the coaches was vital to encourage and guide change and to help participants maintain an ongoing commitment to lifestyle modification. The coaching relationship appears to be essential for behaviour change to occur. The experience was summed up by Participant 60:

I thought that the person I was working with was fantastic, it was really good to work with her. Really practical but a very down to earth, warm person as well. To have support, rather than to think that I could do this on my own, you know. I don't think I could have without the reassurance and being part of that structured programme. All I have to do is look after myself and my health. I'm still doing that.

Participant 330 found that the positive relationship that she developed with her coach, right from the outset of the programme, was enormously beneficial for her to be able to address personal difficulties in her life:

I've never had a coach before, I've never had anything like that. I didn't know what to expect and it was brilliant. [HWC coach] turned up and she's like, "I'm your life coach" and I thought, "What?" like really good and right from day one I noticed benefits.

She went on to explain how the guidance of her coach had helped her to gain confidence and belief in herself, and to become more assertive in her relationships with others:

I've always had a problem with saying no to people and always just take what people say or what people do, and I feel miserable. It gave me a lot of stress, a lot of added pressure and made me feel quite downtrodden and unhappy with that. I think my relationship with my son has changed since I've had the coaching because I was able to say "no" or able to answer back to things. It actually lifted my spirits. That was one of the big things that I've actually noticed.

She discussed how HWC techniques had been of benefit for her to help change her self-concept:

I think we did a lot of time on the goal setting; it was about – it was a lot about approaching difficulties, dealing with things, how was my mindset, what were the important things for me and my values.

Participants found that the collaborative nature of the relationship between the coach and client was encouraging and helpful for change. The coach was able to validate their progress and keep them focussed on lifestyle change:

“This is the benefits of doing it this way, and, give it a go”. They didn’t enforce it, they just said, “Give it a go”. I could also just pick a phone up and ring and talk to them, yeah, sort of thing” (Participant 218).

The approach from the ladies – they made me revisit it again and have another look. The programme was great because I’m always searching anyway, but to discuss it with someone else helped a lot in that I got other opinions on what I was thinking about. I’ve managed to keep eliminating things because I have time to talk to the people [HWC coaches] for half an hour or hour. You know, we sit down with the nurses...it definitely gives you someone to talk to (Participant 239).

The importance of the coaching relationship was emphasised by Participant 114’s experience of role-modelling. His coach had suffered a major medical event some years previously, and through this shared experience of health difficulties, he was able to connect with and relate to her on a very personal level:

It was [HWC coach] that came over here. What she said to me encouraged me in a way. There’s nothing you can get away from, but you can learn how to live with it satisfactorily. Taking that time with her – she’s also been through that. I think she had a xxx at an earlier age and her experience from that I learned a lot from her.

Support from significant others was also reported as important to facilitate change.

Participant 132 spoke of the amount of support that he had received from, not only the HWC coaches, but also from his medical doctor, his friends, and his wife:

Well, I am still mobile, you see that's the greatest of all benefits I would say I have, see. I think it's all contributed because of advice I got from you guys and from my GP. I must not forget to mention Dr Xxx. He kept me in the good mood for that time, and then talking with the ladies [HWC coaches] and, of course, not forgetting my dear one [his wife]. My wife has added some flavour to my life too now, you see, but I also maintain my other life, which I had with my friends.

Participant 114, who had undergone an amputation shortly prior to participating in HWC, found that HWC effectively complemented and enhanced the interdisciplinary rehabilitation treatment that he was receiving at that time:

They had a lot of people around me. They had physiotherapists on the physical side of things. There were also other people there to do the mental side of things. When they [HWC] came along, they sort of piggy-backed onto what I was doing and made it a lot more interesting.

A number of the participants had been referred to the PREVENTS study after their doctor's recommendation. While some of the participants found the support of their doctor to be beneficial in helping them modify their behaviour, two participants were quite critical of the role of the medical model for lifestyle change. Their main criticism was the difficulty in accessing medical advice. *"I can pick up a phone and ring and talk [to the HWC coaches]. Unlike doctors, sort of the big difference. It's hard to get hold of them and they don't have much time"* (Participant 218).

It would have helped a lot if I got other opinions, but the family GP was just short, "Hurry up, I've only got a few minutes, what do you want?" It's a numbers game and they've got to roll them through, yeah (Participant 239).

This suggests that the nature of the collaborative partnership forged between the coach and the client in the HWC model may be important for developing a close personal relationship that guides and supports lifestyle change more effectively than other health models.

3.5. Making a lifestyle change

The initial phase of lifestyle change entailed a shift in core beliefs, values and attitudes to health. It was a process of gaining awareness of positive lifestyle choices through health education. Motivation to change and the positive support from coaches and significant others was the next phase in putting the change process into action. Making the change involved taking responsibility for health choices and being accountable for health behaviours. A future vision for a healthy life helped to sustain the change process. Taking self-control of health choices and positive self-belief in achieving change were prominent themes to emerge from the change process. The change process was summed up by Participant 60:

It's that balancing act of actually knowing and understanding and then the doing part, which is a lifetime, and then making the change. So, it's been a progression to where I'm at and I'm still working on it.

a. Taking control

Participant 60 discussed how awareness and knowledge of good health behaviours had allowed her to take personal agency for her health choices:

You've still got the stresses, but now I can manage the stress – monitoring my sleeping habits, monitoring my diet. I've got better sleeping patterns, I try and do three square meals a day, not four or five and snack in between. I've stopped smoking but I do use a vapour. It's not as bad as a cigarette when you're in that down time. I also can walk five kilometres with the young people now and participate.

Participant 330 had suffered from a lack of self-confidence prior to the HWC. The coaching had restored her confidence and given her the ability to take control of her feelings and emotions in her personal relationships:

It has changed dramatically since I've had the coaching because I don't put up with his [her son's] nonsense and I make it very clear if I'm not available, or if his behaviour's not acceptable, and that was one of the big things I've actually noticed. I'd often just sit there and put up with it and feel hurt and sad inside. I don't do that anymore. I say straight away, you know, "Don't, I'm not putting up with this." So really the quality of life in those relationships has changed. It's helped give me confidence; it's helped me value myself more.

Participant 132 explained how the HWC had empowered him to shift his attitude and take control of his health. *"Okay, I think I'd better go back to my old lifestyle. Meaning take a bit more physical activity because drug is not everything, medicine is not everything. Better go for a walk."* An attitude shift and self-choice to change one's health behaviours was also reflected by Participant 114's account:

The first thing that one has to realise is that you've only got so much time here. You've got what you've got and moaning about it is not going to help it. If you want a good quality of life, the choice is yours. To get to where I want is mine. They [HWC coaches] are put there to help me to go to where I want to go.

The HWC strategy to change health behaviour is undertaken through a process of goal setting. A number of participants spoke about their experience of goal setting to motivate and challenge themselves. *"Tomorrow I've got another three-month stint. I'm back on the green prescription and I want to just really home in on nutrition and a bit more 30-minute walks"* (Participant 60). *"I need to improve my health. I need to get over that boundary of 70 years without pain, without medical problems"* (Participant 218).

So, all the exercises, they weren't mundane; they weren't repetitive or anything. Plus, the charts, the tools she gave me to sort of encouraged me. I found it was getting through my target and like setting goals and everything and getting to those targets. I

enjoyed that because you get to say, “Okay, I’ve done that. That wasn’t so bad after all. Can I push some more?” (Participant 114).

Reframing beliefs and values are an important aspect to developing new strategies to manage challenges such as stress. *“I think the capacity to actually stop and just breathe rather than gung-ho into everything and try ... because I’ve got nothing to prove to anybody” (Participant 60).*

b. Believing in yourself

Participant 114 explained how, prior to taking part in HWC, he had lost hope and belief in himself and his future:

I was in a pretty bad place, as you can imagine, to lose a limb. I didn’t like myself. Just looking at me I was thinking that I would rather be somebody else instead of being me. Because I couldn’t do most of the things that I enjoy in life. I couldn’t do walking. I couldn’t do fishing. I couldn’t do gardening. I couldn’t do anything to get out of the house.

The importance of believing in yourself to change poor health behaviours was a vital aspect of the change process for him:

I’m a lot more confident in how I do things. I have a different outlook on life. Every time I see obstacles, every time I see challenges, I know there’s a way around it. I know I can handle that. It might take me a bit longer than normal, but I can do it (Participant 114).

I’ve got more energy and I’ve now got the opportunity to think of what I’m doing. It’s not a race. It’s not how fast you get there. It’s just making little step changes. It’s okay if it’s not realised at the moment, but I’ll get there (Participant 60).

Participant 218 summed up what renewed self-efficacy and self-confidence meant for him: *“And now I’ve got pride”*.

3.6. Living a transformed life

Participants who actively engaged in the HWC programme achieved improved health and wellbeing in their lives. Participant 60 described the benefits of lifestyle change. *“I see a difference by my actions”*. When asked by the researcher about his current quality of life, Participant 114 replied: *“I am better than before. I’m enjoying life.”* They had experienced improvements in multiple areas of their lives (e.g. exercise, diet, mental health, relationships etc) and lived a more balanced life. They have achieved gains physically and mentally, experienced enhanced relationships with family, friends and work colleagues, had a greater purpose and meaning in life, achieved spiritual growth, and they have an optimistic outlook for the future. The changes that they have experienced for themselves have also emanated outwards to benefit those around them.

a. Living a fulfilling life

Participant 114 discussed what living a fulfilling life, post HWC, has meant for him:

My goal has been to be able to enjoy life and to share that enjoyment with the people that I value, people that I treasure; my whole family for starters, my wife for starters, my children and grandchildren and friends. You try not to be a pain in the butt [he laughs].

Health and wellbeing meant different things for each participant. Physical health allowed Participant 114, to once again, partake in the activities that he truly loved:

One of the things I love is gardening. The targets I’ve set for the exercises...with that fitness level it’s easy for me to get out the wheelchair and onto the box and do the

gardening sitting down instead of standing up. Motivation to do that sends me back to the goal setting I had before.

He discussed how the participating in the HWC programme had taught him different values in his life and that this has led to post-change personal growth for him:

It gives you a bit of perspective of how other people are in the world. The value I have with my family, because before I usually took them for granted. But now it's like you see it from another perspective. You see how really important they really are. You also know that they've got goals; it's not all about you. You've got to respect them for who they are.

Participant 60 described how the HWC programme had taught her the importance of managing her stress and taking care of her own mental wellbeing:

You leave a void or a vacuum or not enough energy or not enough for yourself, so there has to be a realisation that what you're giving out of yourself, you really have to replace it, and quite quickly, because people are taking all the time.

Participant 132 had a newfound attitude to life after the HWC programme. *"Life has to be lived and it's all on you how you decide to live your life. Keep yourself active, don't think too much about adverse happenings, be cheerful and all that."* Participant 218 explained how his new and positive attitude to life has made him enthusiastic and engaged in his daily activities:

It's [HWC coaching] given me more energy and it's provided me a different footpath to think. I wake up about...during the weekends, I wake up about 6 am. By 7 am Bunnings is open. I go, it's about 20 minutes down the road. Yeah, and I go walking around there for ideas. So, it gives me a sort of plan. You know, this is what I do. I don't sit at home, watch TV and, yeah. I feel good. And my two girls, they're so pleased. They sort of encouraged something like this.

He then went on to compare himself with his old attitude, before the HWC programme: *"If I was to turn the clock back, let's say four years, before the coaching... I kind of wouldn't have cared. Like, she'll be right, you know."*

Participant 330 spoke about how HWC had provided a cognitive shift in her beliefs and had helped her to change her own self-concept:

I would say having more self-respect and that's a big thing because I respect myself more and having goals and setting boundaries. I realised that by respecting myself more and not accepting things that were against my values, that was setting a boundary. So, I'd say self-respect helped me actually to stand up, speak up and put boundaries in place. I feel quite relieved that I actually had that opportunity to learn those things.

She went on to discuss how HWC has helped her to reframe her beliefs and values:

Before it was always to achieve higher recognition, you know, to be more high profile, to be recognised for doing something great or being the great go-to person. Actually, it's not really important to me at all now, I'm quite happy doing what I do, I love what I do, and for me it's just important that my family love me.

HWC has been instrumental in changing Participant 60's quality of life in a number of domains. She now proactively engages in physical exercise, manages her diet, sleeping habits and stress. She has stopped smoking, engages in arts and crafts, she is motivated and engaged at work, has taken on further studies, and her relationships with her family have been strengthened. She explained that her experience of HWC was about finding a balance in life:

Researcher: *"In terms of life satisfaction, how would you describe yourself now?"*

Participant 60: *"Much more laid back now and I don't gung-ho and try and help. I'll just pace myself. It's about that balance, finding that balance."*

Participants spoke about the importance of their spirituality as being a part of their current wellbeing. *"I think now that the whole thing about who I am is in the wairua. Strength is knowing who I am and what I am meant to be"* (Participant 60). In Māori the wairua is the spirit of a person that exists beyond death (Moorfield, 2011). *"Part of this change, I believe, has got to do with my faith"* (Participant 114). He went on to explain how his spirituality played an important role in his daily wellbeing. *"In the morning, I usually lead with*

devotions and all that. This is a sort of form of meditating, self-meditating, just to prepare you for what's coming up ahead."

b. The ripple effect of change

The positive lifestyle changes that have occurred for participants has not only enhanced their own health and wellbeing but has also extended beyond them to positively impact those around them. Participant 60 explained that her newfound knowledge and awareness of health issues has allowed her to become a role-model for her family:

It's modelling the behaviour and the attitude and like supporting my family around that too. Try to encourage... like my nephew. Just encouraging him to eat healthy and look after himself. And I've got a mum who's had COPD, she's had a pacemaker in the last 18 months. So, it's just how we behave around food and how we manage routine together as a family. We just have a meal and we're happy. One big pot of boil-up, that's it. Not that, that, that, that. We're not looking for quantity anymore.

They often say, "Gosh, you're looking good" or, you know, I say to them, "Oh, whanau [family], we're not having a meal after a certain time, it's not good for our bodies" and stuff like that. We all go to bed and get up early and things like that. They look at me.

Participant 60 discussed the importance of providing support around health issues within the context of Māori culture:

Giving my time and it's finding that balance. Māori call it 'manaaki'. So, it's when you care for yourself you can care for others. If you don't care for yourself then you can't look after other people. It very much ties into who I am holistically. I've got five sisters and two brothers so I am at a time where I can support them better too, some of their lifestyle choices, or just lead by example. They know that I'm here for them and support them, but I think we all see a change in ourselves.

Manaaki can be defined as supporting, taking care of, giving hospitality, generosity, protecting and showing respect to others (Moorfield, 2011). She has also found that her new sense of wellbeing has been projected into her working environment:

I think that where I would have done it mechanically before, I'm actually doing it with a lot more purpose and role-modelling behaviour, that suits the environment, that keeps us safe and we're learning from each other a lot more. It was that ability, that energy, the way I am now with the change in attitude, the willingness for them to learn and for me to share in a lot more responsive way. It emanates to them as well.

Participant 114 went through an extensive rehabilitation programme alongside HWC. The support that he experienced from the HWC coaches and his own personal growth has motivated him to work with other people who have experienced a trauma and have lost a limb. It has also given him newfound meaning and purpose in his life to act as a role-model for others, after recovering from his own trauma:

It [HWC] has made me... I can actually help them because they see that everything's in working order for wheelchair bound people. If you've got a person in a wheelchair sitting beside you and going through that journey with you, it's a lot easier. It does heaps for me because I see that I'm valued by others... you realise that part of the problem sometimes is they just wanted somebody to listen to them while they talk. Being in this position, I've got heaps of time for them if they need to talk through that.

3.7. Barriers to change

The findings of this study revealed that participating in HWC had been beneficial for five of the participants. The coaching had led to significant change in health-related behaviour and improved health and wellbeing. Another participant had made moderate progress in changing his lifestyle, whilst two participants had not made any significant health-related changes to their lifestyle. A number of factors appeared to contribute to barriers to change for these two participants.

An initial willingness to change may be an important factor for lifestyle change. Participant 24 was interviewed in her home by the researcher, which also provided observational data, alongside the interview. The researcher noted that she was smoking a cigarette at the time of arrival at her home, and she also complained about her hangover from the previous night's drinking. The researcher asked her about her intentions to change her health behaviour:

Researcher: *"After having done the health and wellness coaching, were there any benefits that you got out of it?"*

Participant 24: *"I still would like to give up smoking but it's so damn hard."*

Researcher: *"What do you find difficult about giving up smoking?"*

Participant 24: *"I don't know."*

Researcher: *"Don't you feel motivated?"*

Participant 24: *"I think it's just the habit. It's horrible. I'm not sure it would work because it doesn't work for drugs and alcohol unless you want it to. But I reckon they need like rehab places where you can go away and you have to give up where it's not accessible. But then if you're having to come back, I could go to rehab and then you've still got to live in the real world, don't you, and walk into a shop...not that they're displayed anymore. But I don't know. I mean, I've been smoking for quite a few years."*

Researcher: *"Was there anything about the coaching do you think that has stuck with you or helped you in any way?"*

Participant 24: *"It's made you think, like, just to do... even if it's just little things... like one of the things I remember telling somebody was I made myself park further away from the supermarket, so I had to walk further instead."*

Certain personal distractors may have resulted in her failing to commit herself to the coaching and become motivated to change her lifestyle:

I think that over time when I was like sort of doing it [HWC], there was kind of a fair bit of stress in... like familywise and all that sort of thing. It had nothing to do with the study. But it did help participating in it. I guess it was a good time to be doing it because it took my mind off for a little while... in some ways, something else to think about instead of what was happening at the time, yeah. So that was a help.

Participant 24 had been struggling with a certain amount of ambivalence regarding her health issues. Although she had been unable to make any significant changes to her health behaviour, she had managed to undertake small attempts at improving her physical exercise regime:

The one thing I do is like parking further away. I still do that unless the weather is yuck. Yeah, to make myself walk that little bit further and that. Depends how the hips are.

She expressed some difficulties in making a lifestyle change. She was aware of the need to change her health behaviours but remained uncertain how to go about implementing the necessary changes that were required. At times, she had made small attempts to change unhealthy behaviours, whilst at other times she continued with poor health choices. During the interview she appeared conflicted at times. When asked by the researcher what she thought was the most significant change for her by participating in the coaching, she replied: *“I don’t really know. I can’t think of anything really, no.”* [Arms crossed defensively].

Environmental factors are important supports for facilitating health-related behaviour change. Low socio-economic living standards have been found to be correlated to poorer health outcomes in New Zealand (Pollock, 2011; Robson, Cormack & Cram, n.d.). It was observed that the participant, an unmarried woman, was living in social housing, in a low-income neighbourhood, whilst supporting two children, and did not appear to be financially able to access expensive resources such as a fitness gym to exercise. Nor did it appear that she had a social support network that would help facilitate lifestyle change.

A low awareness of health issues, alternative health beliefs and/or low motivation to change behaviour may explain Participant 262's understanding of health issues:

Researcher: *"What was your experience of the health and wellness coaching programme?"*

Participant 262: *"She just asked me a lot of questions on day to day life and how I was financially, did I climb in the bottle, and about smoking and that. But, yeah, that pretty much was it."*

Researcher: *"Has the health coaching made any difference in terms of your health?"*

Participant 262: *"Well I've never suffered from a headache or hangover."*

Researcher: *"Do you think they taught you any new kinds of skills or anything?"*

Participant 262: *"No, I already had those skills from being a boxer."*

A poor understanding of nutrition was evident from the following account:

My brother has big meals and I say, "You don't want to eat all that." I probably have a pie a day and, yeah, I don't eat a hell of a lot during the day and I don't actually even have dinner. I just have a coffee and a couple of fruit and that's me. I quite like meat, but I don't eat a lot of it anyway. There's a lot of veggies I won't eat...I'll eat them, but I don't go out of my way to eat them.

Maintaining a healthy lifestyle was not experienced as a high priority in his life:

Researcher: *"When you started doing the health coaching, what ideas did you have about where you wanted to be with your health in the future?"*

Participant 262: *"Well, the health never came into it because all I wanted to do is make more money. Yeah, the health wasn't an issue, whereas I just wanted to earn more."*

When asked about his intention to stop smoking, his commitment to lifestyle change was low:

Researcher: *"How many cigarettes do you still smoke a day?"*

Participant 262: *“About 10, 12 smokes a day, yeah. I’m slowly knocking it over but I’m not pushing it.”*

Social support from family and friends is important to facilitate lifestyle change. His social network could possibly be modelling, reinforcing and maintaining some of his poor health choices. *“The people that I drink with, they’re all friendly, they’re nice.”*

Participant 239 had made some changes to his health, such as his diet because of his allergies, but his fixed ideas about his health, and his choice not to pro-actively manage his own stressful disposition, was a barrier to a better health outcome for him in terms of stress:

So, I’ve been working on it (lowering high blood pressure) a long time before you guys came along. Everything you were trying to teach me I had researched the hell out of anyway, I’ve been on it for a long time, so what your nurses and your phone calls were trying to reach me on, I’d already tried that from 18 years old. I’ve been trying to see if there’s some lifestyle choice I can make but there doesn’t appear to be. The only thing I do is two beers a day for psychological life support, ‘xxx’ [curses] relax a little bit, you know, because I’m a wound-up sort of guy, you know. I work hard and I’ve always worked hard and that’s part of who I am.

Support from the coaches was an important component of lifestyle change. Participant 330 emphasised the importance of the coaching relationship for facilitating the health changes that she had made. It was evident from her remarks that she still had some further gains in her health behaviours to achieve by the time that the coaching programme came to an end:

So, I pay a membership at a gym and I’ve done that for about three years now but it’s really just a charity because I don’t go. I can’t be bothered. I do walk the dogs, but not every day, and then I do live with that guilt because I really know I should get out.

It did not appear that she had anyone within her social network to help encourage an increase in physical activity. She also spoke about her disappointment at the HWC programme coming to an end so abruptly and her desire that it could have continued for a longer period to help support her lifestyle change:

I think it [HWC] could go on a bit longer because I really felt quite sad when it finished because I still felt there was a bit more to work through, to embed those new things I'd learnt, and even if it wasn't going to go on longer in that way, if there was a subsidised extra three months that would be good because I think the majority of people would not be able to afford to pay for another therapist or counsellor or coach. It felt like it was over like that. Maybe it could go for three more months, or whatever, and maybe they could touch base by email or text, because [HWC coach] used to encourage that.

If the financial and logistical resources are available in the future, this may suggest that a longer HWC programme, with a gradual tapering off of coaching sessions towards the end of the programme, may be more beneficial for supporting ongoing maintenance of a healthy lifestyle for some participants and achieving better long-term outcomes.

Chapter 4

Discussion

The research examined the experience of participating in a health coaching programme from the subjective experience of those who took part in the PREVENTS study. It set out to examine their lived experience of HWC, and how the coaching had impacted upon participant's lives, after the study. The findings from this study will be examined in terms of how it fits with existing literature and evidence on the theories and models of health behaviour modification.

The outcomes for participants in HWC was varied. Of those who were interviewed, the majority of participants that had committed to participating in the coaching programme reported having achieved improved health and wellbeing in their lives, some more significantly than others. They reported experiencing an improved quality of life and life satisfaction. A few participants had not experienced improved health and/or wellbeing after the study, and this may have occurred for various reasons that will be explored in the discussion.

The experience of lifestyle change was described by participants as occurring through a number of phases. The initial phase was that of gaining new insight into their health issues and becoming motivated to change. Important influences to encourage change were reported to be knowledge, awareness, and intrinsic motivation. This will be explored in the theme: shifting the thinking. An important facilitator for initiating and maintaining change was that of support, which is examined in the theme: supporting relationships. The next phase was that of taking action to change. Self-efficacy and personal agency were reported to empower the change process. This will be discussed in the theme: making a lifestyle change. The final phase of change, that of sustaining healthy behaviour, and the biopsychosocial factors that helped to enable and maintain a healthy lifestyle will be discussed in the theme: living a

transformed life. Finally, the theme entitled barriers to change, will explore the factors that prevented a few participants from modifying their health behaviours. Theories and models of health change will be used to contextualise and situate the findings within contemporary understanding of health change behaviour.

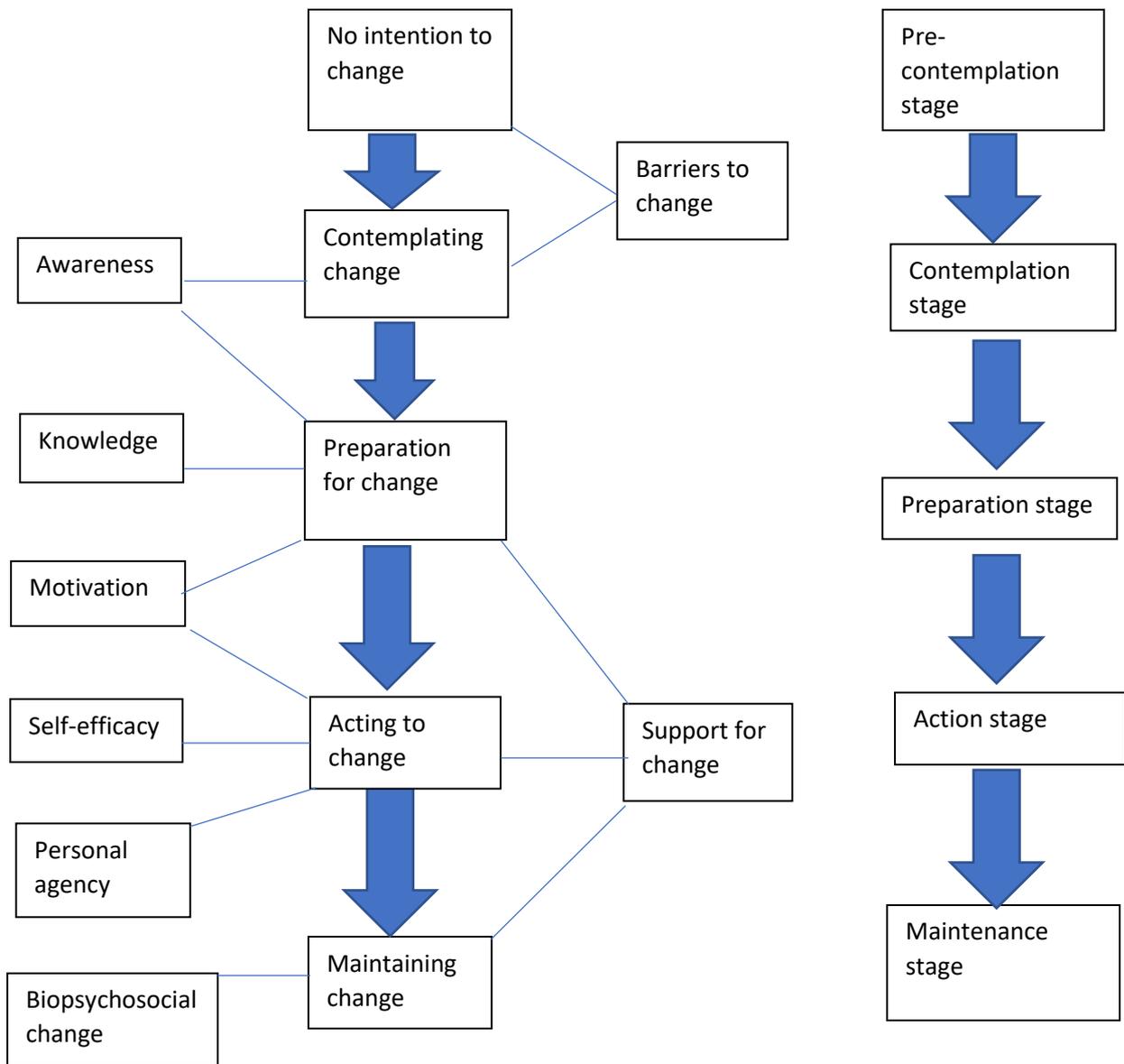


Figure 2. Behaviour change process for participants and the Transtheoretical Model (Prochaska, 1997).

4.1. Shifting the thinking

Three prominent sub-themes emerged from the data: a growing awareness of personal health issues; increased knowledge about healthy lifestyle choice and the education to gain the skills to undertake behaviour change; and a shift in beliefs and attitudes to become self-motivated to change problematic health behaviours.

The difficulty of changing health behaviour

Changing health beliefs and attitudes, in order to achieve a healthy lifestyle is challenging. Health education and knowledge alone is insufficient to modify health behaviour (Bucher, 2016; Aschbrenner et al., 2016; Cannon, 2018). A review of health coaching research by Lindner et al. (2003) found that education-based approaches that were paired with behaviour change strategies were the most effective interventions. The medical model, which is traditionally entrusted with looking after people's health, may also not be ideally suited to elicit health behaviour change in patients. The medical model is focussed on treating illness, not primarily on behaviour change (Hewa & Hetherington, 1995). Medical professionals may assume an authoritarian and directive approach that may be guilt-inducing for the patient. Evidence suggests that this approach is correlated with negative behavioural outcomes (Moyers & Martin, 2006). Instead, "approaches that embrace and address the complex interaction of motivations, cues to action, perceptions of benefits and consequences, expectancies, environmental and cultural influences, self-efficacy, state of readiness to change, ambivalence, and implementation intentions" (Butterworth, Linden, & McClay, 2007, p. 299) are more effective behaviour modification strategies. This is the context where health coaching may be better suited as an approach to change health behaviour.

The importance of awareness

Prior to engaging in HWC and changing health-related behaviours, a number of participants had spoken of their lack of awareness of good health habits and low motivation to modify their unhealthy lifestyles. Olson (1992) maintains that there are three stages to behaviour change. The first stage is an admission of a problem. He believes that the psychological barriers to admitting that there is a health problem are: 1) denial or trivialisation of health risks; 2) perceived invulnerability to health problems; 3) faulty conceptualisations of illness; and 4) debilitating emotions that motivate avoidance of health issues. The transtheoretical model (TTM) of behaviour change (Prochaska, 1997) describes these participants as being in the pre-contemplation stage. Individuals are often unaware that their behaviours are problematic, and they do not intend to take action in the foreseeable future.

The first stage of behaviour change amongst participants was an admission that there was a potential health problem that needed attention. It was about shifting attitudes and beliefs about health behaviour and choices. According to the TTM, these participants are now in the contemplation stage (Prochaska, 1997). This is where they begin to recognise that their lifestyle choice may be problematic. They are aware of the pros of changing behaviour but are also acutely aware of the cons. For example, giving up smoking could lead to anxiety and a difficulty in coping with stress. It is a stage of ambivalence, a balance between the costs and benefits to change. Participants volunteered to take part in the study after their PREDICT scores indicated a five-year risk of $\geq 10\%$. They were referred to the study upon the recommendation of a primary health organisation or their GP. A number of participants reported that becoming aware of their PREDICT score and their stroke/CVD risk was an important catalyst for considering a lifestyle change by enrolling in HWC, although some were not yet motivated to act.

This initial growing awareness of health issues is congruent with the contemplation phase of the TTM. The importance of raising initial awareness in order to encourage behaviour change is paramount in order to begin the health-change process. Prochaska (1997) calls this the consciousness raising process. A study of awareness of hypertension risks amongst adults in

the United States found that approximately 14.1 million adults with uncontrolled hypertension were unaware of their health status. Low awareness was consistent with poor knowledge and/or poor attention being drawn to the problem. They highlighted the importance of raising initial hypertension awareness through health-care providers (Centres for Disease control and Prevention, 2012). Health awareness is not only the charge of health providers, but also the responsibility of the individual. The awareness of one's own health issues is vital in order to prevent a chronic illness from occurring. Stroke awareness and knowledge cannot be over-emphasized. A stroke awareness study in India delivered some alarming results. Twenty-one percent of those surveyed could not even identify a single stroke risk factor (Pandian et al., 2005). Research by Croquelois and Bogousslavsky (2006) reinforced these findings. Only 13% of stroke survivors were found to be aware of the cardiovascular risk factors associated with their stroke. A survey of stroke patients and people from the general population found a poor awareness of risk factors and warning symptoms for stroke amongst both groups (Das, Mondal, Dutta, Mukherjee, & Mukherjee, 2007). This reinforces the importance of raising awareness of stroke risks amongst the population as an important starting point for stroke prevention. This is where health education initiatives can play an initial and vital role in the primary prevention process.

Gaining the knowledge and skills to change

Commencement of the HWC programme and gaining initial awareness of their health issues was the point at which participants experienced a shift in thinking into the preparation stage of the TTM. This preparation, or determination stage, is where individuals become ready to act, including taking small initial steps to change behaviour (Prochaska, 1997). The initial awareness of health issues was supplemented by the education provided by the coaches, in order to add knowledge and skills to their awareness. Participants found that the knowledge and behaviour change skills provided by the coaches was an important facilitator for taking action to change. Olson (1992) calls this the initial behaviour change stage and he maintains that this is where a lack of knowledge is a major psychological barrier to change.

Green, Haley, Eliasziw, and Hoyte (2007) examined the efficacy of education counselling (motivational interviewing) to increase knowledge amongst stroke survivors. Their findings support the notion that awareness and knowledge are important facilitators to encourage patients to move from a passive to an active stage of change (contemplation and preparation stage to action stage). They found a mean change in the intervention group on the stroke knowledge questionnaire from baseline to three months of 14.4% (*SD* 7.5). Knowledge acquisition and retention increased amongst at-risk individuals, and a shift in personal readiness to change occurred. These findings are supported by a brief stroke education study for individuals at risk of stroke, which found that an acquisition of knowledge was effective for encouraging individuals to move from nonaction to the action stage of the TTM for a number of behaviours, such as healthy eating, medication adherence and obtaining regular medical check-ups (Eames, Hoffman, & Phillips, 2014). The number of educational counselling sessions is also of importance in order to achieve change. Rodgers et al. (1999) reported that patients provided with limited teaching by counsellors may or may not increase their knowledge. He suggests that repeated contact and short sessions was more likely to increase long-term stroke knowledge and retention.

Motivation to change

Rollnick, Miller, and Butler (2007) highlighted the importance of effectively motivating individuals in order to achieve health behaviour change. Motivational interviewing is a core component of HWC. “It works by activating the patients’ own motivation for change and adherence to medication” (Rollnick, Miller, & Butler, 2007, p.22). Participants in the study reported that the techniques employed by the coaches were effective for enhancing their motivation to change. Coaches use open questions about change and respond with reflective listening that emphasises change talk, personal responsibility, accountability, freedom, and choice (Rollnick, Miller, & Butler, 2007). Participants reported that the experience of motivational interviewing was one of a collaborative partnership between them and the coach. It activated their own motivation for change and guided them to draw on their own resources for change. They were also empowered to drive their own change process according to their own agenda. Miller and Rollnick (2002) maintain that the strength of the motivational interviewing approach is the focus on enhancing intrinsic (internal) motivation

by resolving any ambivalence to change. Passmore (2011) believes that the dialogue between the coach and the client during motivational interviewing is a key feature for change. This is because the language used by the client can be influenced by the coach through the questions that they ask. The coach can then direct their attention to specific behavioural aspects through a process of open questions, active listening, summary and reflection.

Motivational interviewing draws on the TTM for behaviour change (Passmore, 2011). Unfortunately, the movement through the stages of change is not always a straight path because relapse is a common problem experienced by many people whilst undertaking a lifestyle change. A common feature of movement through the stages of change is ambivalence and this is where the coach is able to guide the client with advice, education and options for action (Rollnick, 1998). Passmore (2011) and Morton et al. (2015) believe that in order to effectively motivate change, the coach must understand where the client is in the stages of change, so that the intervention can be tailored to meet that stage of change. In order to be effective, the appropriate tools and techniques (processes of change) need to be selected and applied at specific stages of change.

4.2. Supporting relationships

Support for change emerged as a central theme from the data. Support was found to be essential for making and maintaining a lifestyle change. The relationship with the coach was the most important aspect of the support framework, with the support of important others being of secondary importance to achieve a lifestyle change.

The support of the coach

The role of the coach and the relationship that developed between the client and the coach was essential for bringing about lifestyle change. Participants described their relationship with their coaches as being non-judgemental. Rather than being directed by their coach to

adopt certain behaviours, participants described being guided by the coach, based on their own values and beliefs. The change process was experienced more as a collaborative partnership between the coach and the client, rather than more 'traditional' teaching methods, such as those employed within the medical model, where patients are directed by their health care practitioner to adopt different behaviours. "Coaches display unconditional positive regard for their clients and a belief in their capacity for change and honouring that each client is an expert on his or her life" (Finn & Watson, 2017, p. 183).

With regards to the medical model, the problem is that change is based on the agenda of the health practitioner. "This frame of reference entails the notion that we have the answers for the patients, and if patients do the things we tell them to do, a measure of optimum health will be restored or maintained" (Huffman, 2009, p.492). This was the difficulty that one participant described in his interactions with the medical model. Huffman (2010) discussed the problem that clients face in having to overcome ambivalence to change. She believes that it is not that they do not understand the necessity to adopt healthy behaviours, it is rather that they are unmotivated to do so. Rather than being labelled as 'non-compliant' when they fail to change their health behaviour, it is because they have not achieved that stage of readiness for change. A participant in the study highlighted the importance of a willingness (readiness) to change as being an essential precursor to initiating a change. Huffman (2010) believes that the advantage to health coaching is that clients are guided to 'discover' their own ambivalence, and the dialogue between the coach and client explores and resolves the ambivalence in order to motivate change. Essentially, it empowers individuals to engage in health and wellbeing from their own perspective and according to their own agenda (Moses, 2018).

The relationship between the client and the coach was seen as important by the participants. Gyllensten and Palmer (2007) go so far as to argue that the coach-client relationship is the most vital component of coaching. Participants experienced the coaches as empathetic and understanding towards them. This fostered a trusting, collaborative and personal relationship for participants. Bordin (1979) suggested that the therapeutic alliance of the client-practitioner should be reframed as a 'working alliance', which could be broken down into goal, task, and bond. Goal is the agreement between client-practitioner. Task is the actions to

achieve goals, and bond is the connection between the client-practitioner. The bond includes trust, acceptance, and confidence. The ‘real relationship’ is the personal connection between the client-practitioner and is separate from the ‘working alliance’. It is comprised of genuineness and realism (undistorted perceptions). According to Gelso and Hayes (1998), the ‘working alliance’ and ‘real relationship’ have a reciprocal impact to achieve transformational outcomes for the client. These transformational outcomes are based upon the values, beliefs, and life vision of the client.

The success of HWC, for a number of participants, may be explained by the nature of the motivational interviewing client-coach relationship. This person-centred approach is able to build a meaningful relationship between the client and coach by focussing on the client’s beliefs and values and tailoring the intervention to meet their needs and vision. Clients in return feel understood and acknowledged, fostering a collaborative partnership between the client and coach (Wolevar et al., 2011). This ‘real’ coaching partnership was experienced by one participant who was struggling with certain health issues. The coach was able to tailor the intervention to meet those immediate needs, building self-confidence for the client. Once the self-confidence of the client was enhanced, the coach was able to focus on other aspects of health behaviour change. A strong bond of trust was developed by the client towards the coach, and the successful coaching relationship resulted in healthier outcomes for the client. Wolevar, Jordan, Lawson, and Moore (2016) emphasise the importance of tailoring an intervention to make changes in the context of the client’s life situation.

The support of others

Outside of the support from the coaches, participants experienced the support of significant others as being meaningful for change. Significant others were described as being family, medical doctors and important friends. The role of social support has been widely researched in behaviour modification for CVD and stroke risk (Northcott & Hilari, 2018; Villian, Sibon, Renou, Poli, & Swendsen, 2017; Tennant, 1999). Lin and Wang (2012) found that social support was essential for motivating change in the action and maintenance stage of the TTM and higher social support was also associated with higher self-efficacy and medication

compliance in both of these stages. Part of the supporting role played by the coaches was to encourage and validate progress and goal achievements. Participants found that validation had also helped to maintain motivation. The support that participants received from their significant others mirrored the supportive role of the coaches. According to the accounts of the participants, those with enhanced social support were most successful in achieving their health goals and changing unhealthy behaviours. This suggests that by augmenting HWC with family and peer support, greater health behaviour modification amongst clients may be achieved. This notion is reinforced by a feasibility study carried out to investigate whether enhancing social support during a health coaching intervention would increase outcomes for individuals with serious mental illness (Aschbrenner et al., 2016). The study included a self-selected support person (family member or friend) into the training programme. The support person's role was to engage and facilitate healthy behaviours such as diet and exercise. Aschbrenner et al. (2016) found that the support person was able to help participants achieve their goals, leading to lower levels of obesity, increased physical activity, better nutritional choices and higher levels of satisfaction amongst participants. The PREVENTS study allowed for a family (whanu) member to be present for the coaching if necessary. A future study could examine a similar social support system, and if deemed to be feasible, employed in HWC for future interventions.

The strength of the coach-client relationship

Participants experienced the support from the coaches as more of a collaborative partnership than an authoritarian and coach-directed intervention. A few participants compared the positive experience of the coaching support with less favourable support that they had experienced from their medical doctors. Their experience was of doctors having very little time available to consult with them, and of being 'told' what to do to address their health issues. Haegele and Hodge (2016) offer a critique of the medical model. They suggest some of the problems that patients experience is that the medical professional is the cognitive authority on what is best for the patient, without taking into consideration what the patient values or wants. This may be experienced as disempowering by the patient. HWC on the other hand is a collaborative person-centred partnership between the client and the coach. The core competencies of the coaching process, such as genuineness, and guiding individuals to

determine their own health goals, and validation of those outcomes, places the power to change in the hands of the client (Bachkirova, Spence, & Drake, 2016; Huffman, 2016). Franklin et al. (2018) suggest that the interaction styles of health providers can play an important role in goal setting by using less directive language, whilst being more flexible and less biomedical in their approach. The dialogue employed by coaches, which employs open-ended questioning and active listening, and conveys empathy and caring, may be a more suitable communication style for encouraging and empowering individuals to change behaviour.

Taylor and Kennedy (2018) believe that it is imperative that more HWC coaches are trained to provide primary prevention interventions for chronic disease. They maintain that the shortage of primary care physicians and the economic burden these doctors are placed under to see as many patients as possible, means that they have very little time available for behavioural counselling. This is where the role of the coach would be advantageous to providing the counselling and support for individuals with chronic illness. Additionally, Thom et al. (2013) advocate for the use of peer health coaches to address the need for primary care prevention in the community in the current healthcare climate where there is a shortage of primary care physicians. Peer support coaches are usually volunteers and have the same disease as the people that they assist. They are a cost-effective solution and are able to provide role-model support and health education widely within the community. In their study, they found that peer support coaches significantly improved diabetes outcomes in low-income patients.

4.3. Making a lifestyle change

Two prominent sub-themes emerged from the data: personal agency amongst participants to take control and drive their own change process; and self-efficacy and belief in their own ability to change. Self-empowerment was central to the participants' experience of taking action to make a lifestyle change.

Personal agency for change

Participants highlighted the importance of taking personal responsibility and being accountable for their own health and lifestyle choices. Taking action to change harmful behaviours was experienced as taking personal responsibility and self-control of their health. It was about shifting responsibility from others onto themselves. This can be described in psychological terms as shifting their locus of control from an external to an internal one (Rotter, 1966).

An internal locus of control suggests that positive health results from one's own doing, willpower or sustained efforts. In contrast, an external locus of control is marked by belief in the influence of fate, powerful others, or supernatural occurrences upon one's health (Wallston, Wallston, & DeVellis, 1978, p.161).

The importance of a high internal locus of control has been found to be associated with healthy behaviours such as increased physical activity and reduced alcohol consumption in a cohort of cardiac patients (Mercer et al., 2018). Evidence from research examining independence of post-stroke survivors found that strengthening the patient's internal locus of control was effective in increasing the daily healthy activities of these patients (Hamzah & Sugiyanto, 2014). This evidence suggests that strengthening the internal locus of control of individuals who are at risk of a first stroke may help mediate against a stroke occurring. This idea is supported by Waller and Bates (1992), who found that individuals with an internal locus of control and high self-efficacy were more likely to benefit from health education programmes.

Self-efficacy to achieve change

In the action stage of the TTM, individuals have not only changed their behaviour, but intend to continue forward with that behaviour (Prochaska, 1997). Enhancing self-efficacy is essential for change (Brouwer-Goossensen, 2018; Lapadatu & Morris, 2019). Olson (1992)

maintains that low self-efficacy is a major psychological barrier to health behaviour change. Self-determination theory (Deci & Ryan, 1985) states that autonomy (self-empowerment and self-choice) and competence (self-belief in one's ability) are important psychological mechanisms to drive change. Perceived self-efficacy is important in all the stages of behaviour change (Bandura, 1997). Participants expressed the importance of self-belief in order to achieve change. Health coaching, motivational interviewing and the role of the coach has been found to enhance self-efficacy amongst patients with type 2 diabetes (Cinar & Schou, 2014). The researchers maintain that the anchoring role of the coach supports the development of positive health behaviours, through self-empowerment, via self-efficacy beliefs. Patients are encouraged to make use of their own resources in order to achieve specific goals. The researchers found that this results in enhanced mastery experiences, which is one of the major constructs of self-efficacy. This in turn 'unlocks' the patient's self-capacity to adopt a healthier lifestyle.

Achieving autonomous motivation to change

Motivational interviewing is not grounded in a theory but Miller and Rollnick (2012) maintain that it is most closely aligned with self-determination theory because they both share common principles. Both share the assumption that individuals have a natural tendency towards self-growth to achieve wellbeing. An important aspect of making a lifestyle change is the ability to maintain motivation during the process. A telephone-based intervention using self-determination principles and motivational interviewing for individuals with spinal cord injury found that this technique enhanced autonomous motivation to engage in physical activity (Chemtob et al., 2019). Participants in the HWC coaching discussed the importance of autonomous motivation in order to remain committed to lifestyle change. They achieved this by setting realistic goals to challenge themselves. Seeing the health benefits of their achievements reinforced their behaviour and encouraged further motivation and commitment to an improved lifestyle. Importantly, those that reported being most motivated to change also reported higher levels of personal growth and wellbeing. Participants in the current study spoke of their experience of feeling personally empowered to take control of their own health issues and lifestyle change. Shifting the locus of control in order to take personal

responsibility for one's health, enhancing self-efficacy and becoming self-motivated to change poor health behaviours were key factors to making a lifestyle change.

4.4. Living a transformed life

The central theme to emerge from behaviour change was transformation occurring for participants in several areas of their lives. They reported experiencing physical, mental, social, occupational, and spiritual gains. Their physical health was improved, and their overall wellbeing had increased. They reported experiencing a higher quality of life and greater life satisfaction.

Biopsychosocial health and wellness

Those that have made the most significant health-related behaviour change, also experienced the greatest amount of change in numerous areas of their life. Approximately two years after participating in HWC, one participant described how she has achieved multiple changes in her life. She ensured that she adhered to her medications, had changed her eating habits significantly, conscientiously adhered to her exercise regime, her family relationships were improved, she was once again motivated and enthusiastic about her work, had taken on additional studies, and experienced greater spirituality in her life.

“Since the 1970s, health psychology has embraced a biopsychosocial model such that biological factors interact and are affected by psychological and social elements” (Johnson & Acabchuk, 2018, p. 218). Other environmental influences such as culture, socioeconomic factors, patient-provider interactions and so forth, are also taken into consideration for health issues in this model. The model provides a foundation for ‘lifestyle medicine’, whereby the scope of mainstream medicine is broadened to include evidence-based lifestyle approaches to prevent, manage, and treat chronic diseases (Egger, Bins, & Rossner, 2009). These lifestyle approaches are based upon healthy behaviour: eating a plant-based diet, exercise, sleep, stress

management, tobacco cessation, alcohol reduction, and so forth. HWC may be a therapeutic intervention that fits well within the biopsychosocial model because it aims to bring about health-related behaviour change in multiple areas of physical, mental, and social functioning. This in turn fosters greater levels of overall wellbeing in life (Havelka, Lucanin, & Lucanin, 2009).

Motivation for sustaining change

The degree of willingness to change health behaviours amongst participants in the contemplation stage of the TTM was associated with the highest amount of health-related behaviour change and the most sustained healthy lifestyle maintenance. These individuals also reported the highest levels of life satisfaction, increased quality of life and overall wellbeing. They also reported high levels of motivation to change and maintain their health behaviours during the action and maintenance stages of the TTM. With regards to the HAPA model (Schwarzer, 2008), a high level of behaviour-specific motivation is predictive of greater health-change facilitation in the volition phase. This in turn fosters greater coping self-efficacy and self-regulation in the volition phase. Research by Farmanbar, Niknami, Lubans, and Hidarnia (2012), examining health behaviour change (physical exercise) based on the TTM and self-determination theory, found that autonomy and self-efficacy were associated with the highest levels of motivation, which in turn predicted behaviour change and maintenance. Health promotion apps that are designed to facilitate and reinforce health behaviours are among the most commonly downloaded apps (Curtis, Lahiri, & Brown, 2015). An examination of health behaviour change apps found that internal drivers (motivation, self-efficacy, illness understanding) and external drivers (illness information, social networking) were the most effective factors in facilitating behaviour change. Of those, motivation was the most important driver of behaviour change (Fitzgeralf & McClelland, 2016). This evidence suggests that motivation is a core component for making and maintaining health behaviour change.

Motivational interviewing, which aims to encourage the client to achieve self-directed behaviour change, employs motivation as the foundational psychological strategy. This

motivational strategy is based on the evidence that motivation is essential for behaviour change. Prior research has demonstrated that extrinsic incentives may be necessary to get individuals to begin new behaviours, but enhancing intrinsic motivation leads to long-term behaviour change (Seifert, Chapman, Hart, & Perez, 2012). An essential goal for coaches in the HWC programs must be to elicit and support the intrinsic motivational intentions of their clients, so as to achieve the most promising long-term outcomes.

Mindfulness practises to sustain change

“There is a belief that the social human animal is composed of body, mind and spirit” (Collen, 2015, p. 294). The SWEM (socialise, work, exercise, meditate) intervention, proposed by Collen (2015), is a coaching intervention, based on the biopsychosocial model of health. He suggests adding a spiritual element, by way of meditation, to the mind, body, and social aspect of the biopsychosocial model. Mindfulness meditation enables an individual to focus on the present moment, rather than dwell on an unchangeable past or unknown future. This is a state where the stress producing activity of the mind is neutralised (Manocha, 2000). The benefits of mindfulness meditation on mental health and wellbeing has been widely reported (Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004). Spence and Cavanagh (2019) examined the implications of mindfulness training in coaching interventions. Mindfulness meditation was found to ameliorate mental health problems (anxiety and depression) and increase wellbeing and goal attainment. They emphasised the importance of coaches matching the mindfulness procedures to the needs of each client. One of the participants in the study described his experience of incorporating his spirituality and mindfulness meditation into his daily lifestyle. His daily morning meditation helped to ‘centre’ him mentally and emotionally. It was an important part of his experience of wellbeing in his life after the HWC programme had ended and was an essential part of his lifestyle change and maintenance of his health. Evidence from controlled trials indicates that the practise of mindfulness skills improves psychological functioning and wellbeing in clinical and non-clinical populations (Virgili, 2013). He advocates the inclusion of mindful-based practises into the health coaching repertoire. Beyond its use as a stress reduction technique, he believes that mindfulness may be useful for providing new pathways to understanding, to facilitate health behaviour change and enhance wellbeing. Interestingly, a

core component of integrative health coaching (IHC) is a whole person approach which emphasises client-centredness and mindfulness (Smith et al., 2013). The evidence suggests that future research ought to examine the efficacy of teaching mindfulness-based practises in HWC interventions.

The role of culture and health-related change

A strength of the biopsychosocial model is that it considers environmental influences, such as culture, to be important for health (Johnson & Acabchuk, 2018). One participant spoke about her experience of maintaining her health and wellbeing in the context of her Māori culture. The Māori Health Model: Whare Tapa Wha is essentially a biopsychosocial model of health and wellbeing. Developed by Durie (1994), the four cornerstones of health are taha tinana (physical), taha hinekarō (emotion), taha whanau (social) and taha wairua (spiritual). The patient's experience of wellbeing, post-HWC, and her quality of life was framed around the concept of Whare Tapa Wha. Living a healthy and transformed life meant attending to each of the four cornerstones of her health. Acknowledging and respecting her Māori culture and wairu (spirituality) was essential to living a healthy lifestyle. The Māori concept of manaaki encouraged her to maintain her health because her belief was that in order to care for the health of others, she needed to take care of her own health first. One of the core competencies of health coaching is that of cultural competence (Huffman, 2016). This is particularly important in a culturally diverse society, such as that of New Zealand. The importance of cultural competency, not only across diverse ethnic backgrounds, but amongst people of minoritized backgrounds, cannot be overstated (Vaccaro & Camba-Kelsay, 2018). These competencies are comprised of awareness, knowledge, and skills, which when employed in the context of the client's culture, are essential for empowering change. "Expanding knowledge of different cultures can provide insights into how cultural influences can affect how patients feel about taking medications or making lifestyle changes" (Herring, 2014, p. 5).

Support to sustain healthy behaviours

Prochaska (1997) describes the maintenance stage of the TTM as where individuals have sustained behaviour change (6 months or more) and continue to maintain the behaviour into the future. It is imperative that individuals work to prevent relapse in this stage. During this stage people may experience a number of psychological barriers to maintaining long-term change such as motivational drift, a lack of perceived improvement, a lack of social support and lapses in healthy behaviour (Olson, 1992). Realising the benefit of lifestyle change was described by participants as a major positive reinforcer for maintaining a healthy lifestyle. External validation from family and significant others was instrumental in keeping them motivated and committed to sustaining a healthy lifestyle. The evidence suggests that support from family and friends results in better outcomes for sustaining healthy behaviour after a lifestyle change (Damush, Plue, Balcas, Schmidt & Williams, 2007; Prakash, Shah & Hariohm, 2016). One participant described the validation from her family as evoking a sense of pride in her own achievement and reinforcement of her self-efficacy and commitment to maintain a healthy lifestyle. Deci and Ryan (2000) maintain (in accordance with self-determination theory) that intrinsic motivation (the individual wanting to maintain a new behaviour) exerts a strong influence on behaviour maintenance. This is especially true if the new behaviour is in line with their beliefs and values (Kwasnicka, Dombrowski, White & Sniehotta, 2016) and is validated and supported by significant others.

The ‘ripple-effect’ of changing behaviour

The improved health and wellness experienced by two participants post HWC, not only resulted in enhanced wellbeing for themselves, but was also projected outwards onto others. Myers, Sweeney, and Witmer (2000) described the concept of wellbeing as growth and development of personal strengths and resources, and this has been emphasised in counsellor education programs (Witmer & Young, 1996). One participant discussed how HWC had given her the personal skills, knowledge, self-efficacy, and motivation to become a role-model for healthy lifestyle choice for her family. She was able to elicit positive health behaviour change for other family members with chronic health conditions. She described

how her family was also experiencing the positive health benefits and improved quality of life from her own participation in HWC. “Families are a linchpin for cardiovascular health promotion throughout the life-course” (Muth, 2016, p. 34). Muth (2016) emphasises the effectiveness of role-modelling health behaviour as an important facilitator of positive health behaviour within the whole family unit. Another HWC participant discussed how the skills he had learnt from the coaching programme has enabled him, as a role-model, to support other wheelchair bound individuals. He described how this gave him greater meaning, purpose, and satisfaction in life. The personal accounts of these participants reinforces the efficacy of the HWC programme for many, demonstrating how personal lifestyle change may lead to a ‘ripple-effect’ of health behaviour change that positively impacts others around them. The goal of primary healthcare interventions is not simply to achieve change at a personal level, but rather to change health behaviour and achieve wellbeing at a family, community and societal level.

4.5. Barriers to lifestyle change

Not everyone in the study was able to make a significant lifestyle change. The themes that emerged from the data suggested that some barriers, either personal or environmental, inhibited change. Two participants, who identified as Māori, and were living in low-income neighborhoods in Auckland, had participated in the HWC programme, but had not been efficacious in making major lifestyle changes. Their ethnicity is only noted because Māori health beliefs and cultural values may have played a role in how they interpreted and interacted with the coaching process.

Cultural barriers to change

“For patients to engage in behaviour change, a healthy lifestyle needs to be on a patient’s agenda and a priority in their lives” (Alageel, Gulliford, McDermont, & Wright, 2018, p. 4). Information alone is not enough to change behaviour (Cannon, 2018). A diabetes prevention study examined some of the barriers for New Zealand Māori for undertaking health

behaviour change (Farmer, Edgar, Gage, & Kirk, 2018). The researchers identified multiple barriers, which included economic, social, cultural, and institutional obstacles to lifestyle change. They reason, that as a result of these difficulties, depression, stress, low self-esteem, and low motivation may impede behaviour change. Māori culture is collectivist and they found that many of the participants had expressed the need for whanau (family) based approaches for diabetes prevention. According to Dutta-Bergmann (2005), the weakness of most health behaviour theories and health education campaigns is that they are focussed on the individual and as a result, overlook the communal context in which health beliefs and behaviours are constructed amongst indigenous or minority ethnic cultures. Bandura's social cognitive theory (1997) recognises that people do not live in isolation. He believes that the strength of a community is often based upon a sense of collective efficacy to overcome external obstacles. Focussing interventions on the whanau or even the community, rather than at the individual level, may deliver better outcomes. Empowering whanau and communities through collective goal setting, enhancing collaborative social support, and building collective self-efficacy may be a more culturally appropriate method to changing health behaviour amongst Māori and other collectivist cultures. "A culture-centred approach utilising participatory methodologies and culturally sensitive behavioural change theory might serve as a model for creating health communication resources in collaboration with other indigenous communities" (Farmer, Edgar, Gage, & Kirk, 2018, p. 311).

Research by Janssen and Nelson (2014) on a primary care diabetes intervention highlighted the importance of providing culturally appropriate health services delivered by Māori nurses that incorporate traditional Māori practises and values. They emphasise the importance of a holist approach to health, identified in the Whare Tapa Wha model of Māori health, where having 'wellness' rather than 'illness' is an appropriate approach to Māori health. Evidence from the study indicated that this culturally appropriate approach was consistent with Māori cultural values, and the client's understandings of the importance of nutrition and exercise was enhanced by the programme. One of the core-competencies included in the current HWC programme is that coaches are trained to be culturally competent. There was no evidence from the narratives of the participants in the current study to suggest that poor cultural competence by the coaches had been a barrier to change, but given the Kaupapa Māori cultural context of empowering Māori to determine Māori health needs, and to become autonomous participants in their own health behaviours, the researcher suggests that

matching Māori health coaches with Māori clients (if possible), may foster a greater personal connection and understanding of unique cultural health issues in HWC client-coach relationships. This suggestion fits with the findings of Janssen and Nelson (2014) to use Māori nurses to deliver healthcare to Māori patients. Alternatively, and with regards to the suggestion of Dutta-Bergmann (2005), HWC that is delivered within a communal context, within the marae (Māori communal meeting house), and focussed on a whanau-based approach, may more effectively address the cultural beliefs and health needs of Māori.

Low SES as a barrier to change

Low socio-economic status has been found to be correlated with poorer health outcomes in New Zealand (Pollock, 2011; Robson, Cormack & Cram, n.d.). Ethnic inequalities between Māori and non-Māori, such as low socio-economic standards of living and poorer healthcare access have been cited as reasons for the higher levels of morbidity and mortality amongst Māori in New Zealand (Ellison-Loschmann & Pearce, 2006; Kennedy, 2017). Sporle, Pearce & Davis (2002) found that Māori male mortality rates remained consistently higher than those of non-Māori. Twenty percent of the difference was attributable to social class, and 15% was due to smoking, 10% to alcohol consumption, 5% to obesity, and 17% to accidents. A staggering 35% was due to chronic illness such as CVD and diabetes. This evidence alone supports the high need for primary prevention and health-related behaviour interventions that can be delivered to Māori living in low-income areas in New Zealand. A pilot study by Simmons, Rush, and Crook (2008) found that a community health worker-based intervention, using motivational interviewing techniques, was found to be an acceptable intervention strategy for Māori at risk of diabetes. The findings from this study are encouraging because: (1) motivational interviewing appears to be a culturally acceptable intervention for Māori, and; (2) motivational interviewing can be readily and cost-effectively delivered to Māori in low-income areas in New Zealand, where there is a high need for primary prevention initiatives.

For individuals living in low socio-economic environments, the problem is two-fold. Not only is there a necessity for individuals to modify their at-risk behaviours, but the resources

needed to support a healthy lifestyle are not usually available or ideal. For example, Pearce, Blakely, Witten and Bartie (2007) found a strong association between low income neighbourhoods in New Zealand and high access to fast food outlets. Low socio-economic status affects individuals through family income, housing, education, working conditions and unemployment (National Advisory on Health and Disability, 1998). Without access to these basic facilities and opportunities, it is unlikely that individuals, even if they are motivated for a lifestyle change, are able to access the necessary resources to support their lifestyle change, such as a fitness gym, regular medical check-ups, healthier food choices, and so forth. Social norms influence health-related behaviour (Cislaghi & Heise, 2019). Social norms are informal rules that dictate behaviour within a given social context. According to Pampel, Krueger and Denney (2010), people living in low socio-economic status groups often enact harmful health behaviours (smoking, lack of exercise, diet etc). They suggest that individuals living in economically deprived neighborhoods associate with similar individuals, and their networks of social support and influence do not promote healthy lifestyle choice, resulting in spill-over effects and social normalisation of unhealthy behaviours. Without the appropriate environmental resources, funding initiatives, social influences, and support networks available, enacting and maintain lifestyle change in low-socio economic environments, will unfortunately remain a challenge for the foreseeable future.

Personal barriers to change

On a personal level, making changes to their health was not reported by these two participants as being a high priority. Paradoxically, both participants maintained that the HWC programme had been a beneficial experience for them. This could be a response bias in order to please the researcher. Alternatively, it is possible that the education provided by the coaches had failed to raise awareness of their health problems, which in turn, was not translated into motivation and a willingness to change. Additionally, the education provided may not have been consistent with their own health beliefs. This was difficult to establish during the interview process as a number of responses to these questions were evasive. With reference to the TTM, it could be suggested that they were stuck in the pre-contemplation stage of behaviour change. In this stage, people do not intend to take action in the foreseeable future. They are often unaware of the negative consequences of their behaviours, they may

not perceive their behaviour as problematic, and they may place too much emphasis on the cons of behaviour change (Prochaska, 1997). For example, both participants expressed a desire to stop smoking, but also expressed their ambivalence and difficulty to give up their habit. Shaw et al. (2012) highlight the importance of coaches being able to fit the coaching to the point at which clients are ready to move to the change stage of the TTM. Ambivalence and hyperbolic (delay) discounting may also play a role. Hyperbolic discounting is a cognitive bias where individuals give little importance to events that may occur in the distant future (e.g. smoking risk in the short-term versus a cancer diagnosis in the long-term). This entails short-term reward at a long-term cost. The challenge is eliciting a cognitive shift (attitudes, beliefs, values) to address future health risks in the immediate present (Hofmeyer et al., 2017). This may explain both participant's inability to actively engage with stopping smoking and/or some of their other poor health choices.

Their low motivation to make significant lifestyle changes may also be explained by the health belief model (Janz & Becker, 1984). The model suggests that without sufficient self-efficacy, an individual may use defensive mechanisms such as denial or rationalisation to justify their behaviour, which will prevent behaviour change from occurring. HWC and motivational interviewing encourages behaviour change in accordance with an individual's values and beliefs. Without a shift in awareness of personal health issues, and if the individual's current values and health beliefs are not congruent with achieving a healthier lifestyle, health change may be difficult, or simply fail to occur. One participant appeared conflicted and defensive about making a lifestyle change, suggesting that she may have been experiencing cognitive dissonance. The knowledge that a health-related lifestyle change is necessary may impose an underlying state of guilt and this may lead to indecision and uncertainty. This mental conflict creates cognitive dissonance: the mental discomfort experienced when an individual holds two or more contradictory beliefs, ideas or values; or when performing an action that contradicts these beliefs, ideas or values; or when being confronted by information that contradicts these beliefs, ideas or values (Festinger, 1957).

Freijy and Kothe (2013) believe that dissonance-based interventions may be effective for eliciting health-related behaviour change. According to Aronson, Fried and Stone (1991), inconsistency between an individual's present attitude and past failures causes dissonance.

The primary method for them to reduce their dissonance is through behaviour change, rather than attitude change. A systematic review of 20 dissonance-based interventions was undertaken, and the evidence revealed that the outcomes from these interventions are generally positive. Changes were achieved in one or more health behaviours, attitudes or intentions. Overcoming ambivalence to change is a core component of motivational interviewing. Incorporating dissonance-based intervention techniques into HWC may motivate highly resistant individuals to make a lifestyle change.

A lack of support for change

Support is essential for health-related behaviour change to occur (Gyllensten & Palmer, 2007). Unfortunately, social support does not uniformly buffer the effects of stressors on health for people living in low socio-economic conditions (Moskowitz, Vittinghoff, & Schmidt, 2013). Social networks of those living in low income environments tend to be smaller, more isolated, and composed of other equally low-income individuals (Tigges, Browne, & Green, 1998). The depletion of resources in these communities suggests that they also have few resources to spread around, including social support. Social support has been examined as a moderator between self-regulation and health behaviours. Individuals with low self-efficacy were found to have higher perceptions of autonomy, if effective social support was available. Social support was found to buffer against poor health behaviours for those with low self-regulation (Warner et al., 2011). From the descriptions of the two participants, social support from family and/or extended social support from friends did not appear to be conducive to health behaviour change. There was also an absence of role-models to reinforce good lifestyle choices. Farmer, Edgar, Gage, and Kirk (2018) found that role models are important to model and reinforce healthy behaviours amongst Māori communities.

Without the necessary social network to support healthier lifestyle choices, change may have been difficult to accomplish. One participant had made a number of significant changes after the HWC programme, but experienced difficulties to sustain change after the support system of the coaches had been terminated at the end of the programme. She expressed an on-going need for a progressive tapering off of the coaching, rather than a sudden end to the

programme. A coaching intervention, using digital technology, and social media, for adolescents with mental health issues was found to deliver promising results in terms of sustaining positive mental health over a long-term period (Kelly et al., 2019). Similar results were found for a web-based digital health coaching intervention for stress management for women (Guisseffi et al., 2010). The fact that 63,690 women participated in the coaching programme suggests that on-going digital media coaching may be a potentially effective method for maintaining support with clients for a longer period and for reaching a wide audience, once the initial HWC programme has been completed. A preliminary study into the efficacy of web-based e-coaching found it to be a low-cost and effective intervention, with the potential to reduce 10-year CVD risk (Yousuf et al., 2019). The barriers to implementing ongoing digital media support for a future HWC programme for individuals at risk of stroke or CVD may potentially be a lack of logistical resources and financial cost, but it will still be worth examining the potential for using digital media support for further HWC interventions, possibly via a future pilot study.

4.6. Summary of the findings and discussion

The reported experience of participating in the HWC programme was found to be consistent with Prochaska's (1997) TTM of behaviour change. The ultimate goal of HWC is to get participants to the point in the maintenance stage where they are able to autonomously sustain healthy lifestyle choices. The participants in this study that were able to autonomously sustain healthy lifestyle choice, discussed how certain essential factors had contributed to them adopting healthy behaviours. They highlighted the importance of an initial willingness to change needing to occur, in order to undertake the actual changes. Essentially, they needed to shift their thinking by changing their attitudes and beliefs about health. Gaining an awareness of their health issues, problems and unfavourable health behaviours was the catalyst for change. The knowledge and education provided by the coaches was essential to develop their further awareness and to overcome their ambivalence to change. A lack of knowledge at this stage is a major barrier to change (Olson, 1992). Green, Haley, Eliasziw, and Hoyte (2007) highlighted the importance of awareness and knowledge in order for individuals to move from a passive to an active stage of change. In order to get clients to the point at which they are willing to change, requires the coaches to utilise strategies that are consistent with the

client's level of readiness for change (Passmore, 2011; Morton et al., 2015). If the coach is congruent with the client's stage of change, and not imposing change on the client, clients may be less resistant to change (Britt, Hudson, & Blampied, 2004). The final step to taking action was becoming motivated to change. Miller and Rollnick (2002) maintain that the strength of motivational interviewing is that it harnesses the intrinsic (internal) motivation of the client. Clients are encouraged to work on issues that are most relevant for them and to set goals congruent with their own health needs. Self-determination empowers the client to become their own agent for change. In sum, awareness, knowledge, and motivation were key factors to elicit change.

Support was experienced as being an essential component of the change process. The relationship between the client and the coach was vital for change to occur. Gyllensten and Palmer (2007) maintain that this relationship is the most important component in the behaviour change process. The relationship was experienced as a partnership between the client and coach, rather than being driven and directed by the coach (Wolevar et al., 2011). The collaborative nature of this relationship allowed for open communication between the client and coach in order to build a health-change plan that worked for the client. Clients felt valued and understood by their coaches, fostering a 'working alliance' and a 'real relationship' that led to transformational outcomes (Gelso & Hayes, 1998). The support of significant others was also experienced as essential for change. Lin and Wang (2012) found that social support is essential for achieving change in the action and maintenance stage of the TTM. Participants with good social support networks were the most successful in adopting new and healthy behaviours. This suggests that by enhancing social support for the client, by possibly including a self-selected family member or friend into the coaching programme (Aschbrenner et al., 2016), clients will continue to receive support and encouragement beyond that of the coaching intervention. This may help clients to overcome barriers to long-term change such as relapse (Olson, 1992), and achieve sustained lifestyle transformation.

Achieving personal agency was paramount, in order for clients to drive their own change process. The core component of this was self-efficacy. "Self-efficacy is a proximal and direct predictor of intention and behaviour" (Bandura, 1997, p. 189). The common construct in a

number of health change models and theories (social learning theory, self-determination theory, TTM, IMB, HAPA and the HBM) is that of self-efficacy. Enhancing self-efficacy is essential for change (Brouwer-Goossensen, 2018; Lapadatu & Morris, 2019). Participants described their experience of living a new and healthy life as that of being empowered to determine their own destiny in terms of their health. The strength of motivational interviewing is that it harnesses the client's own self-belief by shifting their locus of control to an internal state, which is supported by their own intrinsic and autonomous motivation (Miller & Rollnick, 2012). This is reinforced by Lubans and Hidarnia (2012) who reported that high levels of autonomy and self-efficacy were determinant of greater motivation, which predicted the most favourable outcomes for long-term behaviour change. Individuals have a natural tendency towards self-growth to achieve wellbeing (Miller & Rollnick, 2012). Eliciting client self-efficacy is an essential task for health coaches because self-efficacy beliefs determine whether health behaviour change will be initiated, the amount of effort that will be expended, and how long new behaviours will be sustained in the face of challenges and failures (Schwarzer, Lippke, & Luszczynska, 2011).

Participants that had achieved sustained change, had also endeavoured to undertake the greatest amount of change in numerous areas of their lives. They also reported the highest levels of wellbeing, quality of life, and life satisfaction after participation in HWC. Significant change had been experienced physically, mentally, socially, and for some, spiritually. This is consistent with the biopsychosocial model of health (Engel, 1980), where health is conceptualised as a dynamic interaction between physiological, psychological, and socio-environmental factors in the promotion of wellness, rather than simply the absence of disease. Collen (2015) advocates adding a spiritual element, by way of meditation, to the mind, body, and social aspect of the biopsychosocial model. The benefits of mindfulness on wellbeing has been widely documented (Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004). Incorporating mindfulness-based practises into the current HWC programme, such as meditation, may be useful for providing new pathways to understanding to facilitate health behaviour change (Virgili, 2013).

Founded by Durie (1994), the Māori Health Model: Whare Tapa Wha is essentially a biopsychosocial model of health and wellbeing. The four cornerstones of health are taha

tinana (physical), taha hinekaro (emotion), taha whanau (social), and taha wairua (spiritual). The Māori philosophy of health is centred on whanau health, rather than individual health, and based on a holistic health model of wellness (Cram, Smith, & Johnstone, 2003). Māori practises and cultural concepts that are important for Māori health have been diluted by dominant Pakeha (NZ European) views on health. This activates issues of disempowerment for Māori (Ellison-Loschmann & Pearce, 2006). The consequences may be suspicion and a reluctance to engage in healthcare interventions. Incorporating Kaupapa Māori methods (by Māori, for Māori) into the current HWC programme may enhance behaviour change outcomes amongst Māori clients. Cultural competency may not always be sufficient in the context of Māori health beliefs. Rather, matching Māori trained HWC coaches with Māori clients (if possible) may optimise the client-coach relationship and enhance behaviour change outcomes. In the same manner, potential ethnic matching of coaches and clients amongst other minority ethnicities in New Zealand (Asian, Pasifika etc.) may enhance cultural understandings of ethnic-specific health needs and lead to more sustained outcomes. This could be investigated in the future through a possible pilot study.

Realising the benefits of a sustained lifestyle change gave participants a sense of accomplishment and satisfaction. Experiencing the rewards of increased physical health, improved energy levels and mood, better sleep, enhanced social connections, committed medication adherence and so forth, reinforced their intrinsic motivation and self-efficacy/competency beliefs to sustain their positive health behaviours. This is consistent with the findings of Cinar and Schou (2014) that health coaching reinforces positive health beliefs to maintain a healthy lifestyle. Participants experienced personal agency to take charge of their own health and all reported greater personal wellbeing in their lives. These findings are consistent with those of Clark et al. (2014), Sears, Coberly, and Pope (2016), and DeJesus et al (2018) that health coaching results in an improved quality of life and greater life satisfaction for individuals at risk of chronic illness.

There were barriers to health behaviour modification for a few of the participants. These participants were living in low-income areas. Low socio-economic status is correlated with poorer health outcomes in New Zealand (Pollock, 2011; Robson, Cormack, & Cram, n.d.). Pampel, Krueger, and Denney (2010) maintain that people living in low socio-economic

status groups often enact harmful health behaviours (smoking, lack of exercise, diet etc.). They also lack supportive social networks to encourage more favourable health behaviours (Moskowitz, Vittinghoff, & Schmidt, 2013). These participants were still engaging in unfavourable lifestyle choices (e.g. smoking, lack of exercise, poor diet etc.). They did not experience support from their social network of family and friends to adopt improved health behaviours after HWC. Without the availability of the appropriate resources and social support for lifestyle change, low socio-economic status will remain a barrier to changing health behaviour. In terms of ethnicity, those with the poorest outcomes in terms of changing health behaviour identified as Māori. Given the context of Kaupapa Māori by empowering Māori to determine Māori health needs (Janssen & Nelson, 2014), matching Māori health coaches with Māori clients, may foster a greater personal connection and understanding of unique cultural health issues in HWC client-coach relationships. Alternatively, delivering whanau-based communal HWC within the marae may help to change and sustain healthy lifestyle choice for Māori (Dutta-Bergmann, 2005).

Support is essential for health-related behaviour change to occur (Gyllensten & Palmer, 2007). A participant discussed her difficulties to sustain change after the support system of the coaches had been terminated at the end of the programme. She advocated for a gradual termination of the coaching, rather than an abrupt end after the 12 coaching sessions. She also expressed a need for some form of digital technology to provide support into the maintenance stage of the behaviour change process to help buffer against relapses. HWC interventions using digital technology (text messaging and social media) have been found to be an effective platform to support health and wellness (Kelly et al., 2019; Yousuf et al., 2019). Logistical and budget constraints will always be an issue when providing primary prevention strategies in the community but providing some form of follow-up coaching support for a longer period, after the coaching sessions have ended, may enhance long-term health-related behaviour change outcomes in the future.

Chapter 5

Implications of the study

The current study illustrates the positive health and wellbeing outcomes for participants in the PREVENTS study and establishes that healthcare interventions, such as HWC, is a feasible and practical health-related behaviour modification approach for ongoing implementation as a primary prevention strategy in the community for individuals at risk of stroke or CVD. The findings are consistent with the systematic review of thirteen health coaching studies carried out by Kivela, Elo, Kyngas, and Kaariainen (2014) to investigate the efficacy of health coaching for patients with chronic diseases. Health coaching delivered positive effects on patient's physiological, behavioural, psychological, and social domains of functioning. Their research found statistically significant improvements for physical activity and mental health status. Similar outcomes were reported by participants in the current study that managed to sustain healthy lifestyle choices 2-3 years after participation in the PREVENTS study. They experienced improvements in physical functioning and mental health, social support networks were improved, spiritual growth was enhanced, and they reported positive engagement in the community, at work, and with family as role-models of health-related behaviour. These positive health behaviours persisted 2-3 years after HWC. These findings add to the evidence that health coaching benefits persist in the long-term (Sharma, Willard-Grace, Hessler, Bodenheimer, & Thom, 2016). To date, there is limited literature on the efficacy of health coaching for individuals at risk of a first stroke. Additionally, there is a lack of research on sustained wellbeing outcomes for these individuals after HWC. The results from the study demonstrate that HWC is effective for modifying health behaviours of those at risk of a first stroke and that these positive outcomes can be sustained long-term. These findings support and inform the implementation of HWC as an ongoing primary prevention strategy for stroke and CVD risk amongst multi-cultural populations in New Zealand.

The subjective experience of participants in HWC sheds light on a number of factors that the participants perceived as being personally relevant in order for a health-related lifestyle change to occur. These factors were also found to be consistent with contemporary knowledge and understanding of health change theories and models. Key aspects for health coaches to focus on during the contemplation and preparation stages of the TTM are raising awareness of health issues, supplementing awareness with the knowledge and skills to act, and to enhance the intrinsic motivation and self-efficacy of clients. The importance of personal agency and self-efficacy were reported by the participants as being vital to maintain intrinsic motivation in the action stage of the TTM. These findings are supported by those of Cinar & Schou (2014), who maintain that intrinsic autonomous motivation and self-efficacy/competency beliefs are paramount for clients in order to bring about change. Coaches need to focus their efforts on enhancing these psychological aspects of the behaviour change process. Clients experienced the support of the coach as being vitally important for change to occur. The collaborative and person-centred nature of the coaching relationship has been reinforced by other studies as being an important component of the change process (Gyllensten & Palmer, 2007; Wolevar et al., 2011; Wolevar, Jordan, Lawson, & Moore, 2016).

The support of family and friends was also experienced as important for facilitating change. Those that failed to achieve significant change were not able to access the appropriate social networks to support their lifestyle change, whereas those that reported better quality in terms of health and wellbeing also experienced greater levels of social support. The results from a study by Aschbrenner et al. (2016) demonstrates that enhancing social support by way of a self-selected family member or peer support person delivers more favourable health outcomes over a longer period. The support person undergoes the HWC alongside the client, in order to provide additional support to the client outside of the coaching sessions. This is delivered in the environment in which the client carries out their daily living. This may buffer the adverse influences of unfavourable environments (e.g. low socio-economic areas, negative peer influence etc.), whilst providing ongoing support long-term. Additionally, it may protect against psychological barriers to long-term change such as motivational drift and/or relapses (Olson, 1992). This may be a future support strategy for HWC to investigate in order to enhance sustained lifestyle change. Support persons may also be of economic

benefit, as these family/peer support persons will be a more cost-effective option than training more health coaches over a long-term period.

Further strategies for HWC to consider is that of matching coaches of the same ethnic/cultural background with clients (Janssen and Nelson, 2014). Evidence from Māori health studies incorporating Kaupapa Māori methods may deliver more culturally matched health outcomes. Communal whanau-based HWC may also deliver better outcomes for Māori (Dutta-Bergmann, 2005). Integrated health coaching (IHC) incorporates mindfulness-based practises into their coaching sessions (Smith et al., 2013). The efficacy of mindfulness is well-established (Virgili et al., 2013) and may be an additional technique for future HWC interventions to consider implementing.

Cost-effective strategies to support and sustain the health behaviours of clients post coaching sessions, over a longer period, ought to be investigated for future HWC programmes. Options might include digital media (text or social media). Preliminary research by Kelly et al. (2019) and Yousuf et al. (2019) found that this supported positive health behaviours over a sustained period. Telephone-based health coaching has proven to be effective for people with chronic diseases (Benson et al., 2018; Hammersley, Cann, Parrish, Jones, & Holloway, 2015; Coventry et al., 2019). Telephone-based follow-up sessions may support the maintenance of a healthy lifestyle if coaches were able to make periodic contact (e.g. every 3 months) for the first year to 18 months after HWC. This would obviously be dependent on logistical and budgetary resources.

Group-based HWC programmes may also be beneficial in that a greater portion of at-risk individuals may be targeted in each session, whilst those undergoing coaching may provide peer support to each other to encourage ongoing favourable health behaviours. Armstrong et al. (2013) are in favour of group-based health coaching because it encourages accountability if others are witness to the client's goals. Group-based coaching facilitates greater support within the group, and between group members, as individuals are able to motivate and validate each other. Witley (2013) found similar outcomes. A group-based health coaching programme for individuals with long-term health conditions found that peer support amongst

participants led to enhanced experiences of encouragement, support and advice for each other. Peer support health coaches, as advocated by Thom et al. (2013) is another promising cost-effective solution for delivering primary prevention support and education widely in the community.

Chapter 6

Limitations of the study

The sample size of only eight participants may have been a limit in this study. There has been some debate over the appropriate sample size for qualitative research (Dworkin, 2012). Mason (2010) argues that saturation of data is the most important factor when considering sample size. Saturation is the point at which the data offers no new relevant information. Dworkin (2012) recommends a sample size of 25-30 participants to reach saturation, whilst Mason (2010) suggests only 15 individuals. On the other hand, Morse (2000) argues that other factors such as, the quality of the data, the scope of the research, the nature of the topic under investigation, the research method employed, and the usefulness of each participant's data are all relevant factors to consider with regards to sample size. Although the sample size of the current study was relatively small, saturation of data from a repetition of similar participant experiences, the quality of the data, and the usefulness of the information obtained, suggests that these findings can be used to inform further research into the long-term outcomes for participants that engage in HWC for CVD or stroke prevention in the future.

It must be noted that this was not the only qualitative study, at the time, examining outcomes from the PREVENTS study. A larger qualitative study also investigated outcomes from HWC such as engagement with the coaching programme, maintenance of health behaviour post-study, and so forth. This piece of research is also only a small part of an ongoing follow-up study to examine outcomes from the PREVENTS study.

In terms of participant demographics, a larger sample size would have been more representative of the population diversity in New Zealand (as there was only one Pasifika participant and one Asian participant). A larger cohort of Māori participants may have been valuable for shedding further light on the cultural aspects of health for Māori in terms of the

Māori Health Model: Whare Tapa Wha (Durie, 1994) and its relevance, applicability and cohesion with HWC. The incidence rates of stroke in Māori is also higher than other population groups in New Zealand (Krishnamurthi et al., 2018). Females were only lightly represented in the study (3), although Dyllal et al. (2006) revealed that stroke incidence is higher in men than women in the age group of 65-74 (the sample of participants in the current study fell roughly within this age range).

Conclusion

The current study set out to investigate the lived experience of participants in the PREVENTS study that undertook HWC as a primary prevention intervention for individuals at risk of CVD or stroke. The aims of the study were to examine their subjective meaning of HWC, how the coaching had impacted upon their wellbeing 2-3 years post-participation, and the factors that contributed to a long-term healthy lifestyle after HWC.

The participants' experience of modifying health behaviours was consistent with contemporary theories and models of health-related behaviour change. Participants highlighted the importance of awareness of health behaviours, knowledge of health issues, and autonomous intrinsic motivation as being key facilitators for enabling change. Self-efficacy and an internal locus of control were essential for personal agency in order to take self-control to proactively change behaviour. A high self-efficacy is consistent with a number of theories and models of health-related behaviour change (TTM, self-determination theory, health belief model, HAPA etc.). Participants that sustained healthy lifestyle behaviours reported that feeling self-empowered to take control, personal responsibility and accountability were important drivers to maintain their motivation and commitment to positive health. Biopsychosocial outcomes, encompassing physical, psychological, social and spiritual changes in behaviour and lifestyle were associated with high levels of wellbeing 2-3 years after HWC.

The most essential element for health behaviour change was support. The person-centred and collaborative partnership between the client and coach enabled the client to achieve self-directed lifestyle change. Support from family and significant others was an important element of the ongoing maintenance of a healthy lifestyle. Apart from low economic status, and health beliefs/health priorities, the most significant barrier to change was a lack of support for behaviour change outside of the coaching environment. A lack of appropriate social support networks and/or on-going support after the coaching sessions had terminated was not conducive to the long-term maintenance of a healthy lifestyle.

The findings suggest that a focus on building awareness through education and enhancing autonomous intrinsic motivation and self-efficacy are important determinants for health behaviour change. These are all important elements of motivational interviewing where individuals are guided to take charge of their own health. This highlights the importance of empowering individuals so that they can self-determine their own behaviour change process. Self-efficacy and personal autonomy was found to be effective for sustained health behaviour change and facilitating long-term wellbeing. It also reinforces the efficacy of motivational interviewing as a behaviour change technique for individuals at risk of stroke or CVD and adds support to previous literature that HWC is an effective primary prevention approach for chronic disease.

Given the shortage of primary care physicians and the global burden of noncommunicable diseases, HWC is of paramount importance for future primary prevention of disease. It is effective for targeting and changing modifiable health behaviours (e.g. smoking, exercise, diet etc.). In order to achieve health-related behaviour change at a community, national and global level, the need for more health coaching interventions and trained health coaches is evident. Training peer coaches is cost-effective and achieves a wider reach for education and role-model support in the community, whilst utilising digital media, such as text messaging and e-coaching has even greater future potential to expand health coaching within New Zealand, and beyond.

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Appendix A



Health and Disability Ethics Committees
Ministry of Health
133 Molesworth Street
PO Box 5013
Wellington
6011

04 816 3985
hdecs@moh.govt.nz

19 December 2017

Prof Valery Feigin
AA254
90 Akoranaga Drive
Northcote
Auckland 0627

Dear Prof Feigin

Re:	Ethics ref:	16/NTA/36/AM02
	Study title:	Efficacy of a Health and Wellness Coaching program for the primary prevention of stroke and Cardiovascular disease in the community

I am pleased to advise that this amendment has been approved by the Northern A Health and Disability Ethics Committee. This decision was made through the HDEC Expedited Review pathway.

Please don't hesitate to contact the HDEC secretariat for further information. We wish you all the best for your study.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'B Fergus'.

Dr Brian Fergus
Chairperson
Northern A Health and Disability Ethics Committee

Encl: appendix A: documents submitted
appendix B: statement of compliance and list of members

Appendix B

The logo for Auckland University of Technology (AUT) is displayed in white, bold, sans-serif capital letters on a dark grey rectangular background.

AUTEC Secretariat

Auckland University of Technology
D-88, WU406 Level 4 WU Building City Campus
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

16 March 2018

Rita Krishnamurthi
Faculty of Health and Environmental Sciences

Dear Rita

Re: Ethics Application: **16/174 Primary Prevention of Stroke and Cardiovascular Disease in the Community.**

Thank you for your request for approval of amendments to your ethics application.

The amendments to the data collection protocols (to include interviews being videoed and audio recorded) is approved.

I remind you of the Standard Conditions of Approval.

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>.
3. Any amendments to the project must be approved by AUTEK prior to being implemented. Amendments can be requested using the EA2 form: <http://www.aut.ac.nz/researchethics>.
4. Any serious or unexpected adverse events must be reported to AUTEK Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEK Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEK grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it. If the research is undertaken outside New Zealand, you need to meet all locality legal and ethical obligations and requirements.

For any enquiries please contact ethics@aut.ac.nz

Yours sincerely,

A handwritten signature in black ink, appearing to read 'K O'Connor', is written over a light blue horizontal line.

Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: Susan Mahon; Valery Feigin

Appendix C



AUT NATIONAL INSTITUTE FOR STROKE AND APPLIED NEUROSCIENCES

Registration Number:	Participant Initials:	Date of Birth:
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Primary Prevention of Stroke in the Community (Prevents)- Lifestyle Maintenance Participant Information Sheet and Consent Form

An invitation

You are invited to take part in a research study because you are currently a participant in the PREVENTS 3-year follow-up study. This study is coordinated by the National Institute for Stroke and Applied Neurosciences, AUT University in Auckland.

Your participation is entirely voluntary (your choice). You do not have to take part in this study. If you choose not to take part, any care or treatment that you are currently receiving will not be affected. If you do agree to take part, you are free to withdraw from the study at any time, without having to give a reason. Withdrawing at any time will in no way affect your future health care. To help you make your decision please read this information brochure. You may take as much time as you like to consider whether or not to take part, and we are happy to answer any questions you might have.

What are the aims of this study?

The aim of this study is to examine quality of life and life satisfaction after Health and Wellness Coaching.

Stroke and heart diseases are leading causes of death and disability in New Zealand adults. However, both stroke and heart disease are largely preventable. We are conducting qualitative interviews with participants who received Health and Wellness coaching to explore ways in which the intervention they received over 9 months impacted their lifestyle over the past 2-3 years.

Who can take part in the study?

All people who are current participants in the PREVENTS 3-year follow-up study.

How many people will be in the study?

We expect there will be about 20 people in the study.

What happens if I do decide to take part?

Registration Number:	Participant Initials:	Date of Birth:
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If you decide to take part, you will also be asked to take part in a telephone interview at time convenient to you, and this will take about 30-40 minutes.

Registration Number:	Participant Initials:	Date of Birth:
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AUT NATIONAL INSTITUTE FOR STROKE AND APPLIED NEUROSCIENCES

What is the time-span for the study?

The study is expected to start on 28th April 2016 and will continue until 30 July 2019. Your involvement will be just for interview during this time.

How will the study affect me?

Taking part in this study will take some of your time and require you to answer some questions in an interview. There are no known risks caused by this study. Your usual medical care will not be affected in any way by participating in the study, or by deciding not to take part in the study or withdrawing from the study at any stage. Your participation in this study will be stopped if any harmful effects appear or if the doctor feels it is not in your best interests to continue. Similarly, your doctor may at any time provide you with any other treatment he/she considers necessary.

This study may help others who have a high risk of stroke and/or heart disease to reduce their risk in future. There is no guarantee that you will benefit directly from being involved in this study.

Confidentiality

The study files and all other information that you provide will remain strictly confidential. No material that could personally identify you will be used in any reports on this study. Upon completion of the study your records will be stored for 10 years in a secure place at NISAN, AUT University in Auckland. All computer records will be password protected. All future use of the information collected will be strictly controlled in accordance with the Privacy Act.

Compensation

In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation, and Compensation Act 2001. ACC cover is not automatic, and your case will need to be assessed by ACC according to the provisions of the Injury Prevention, Rehabilitation, and Compensation Act 2001. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors, such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses, and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators.

Registration Number:	Participant Initials:	Date of Birth:
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If you have any questions about ACC, contact your nearest ACC office or the



AUT NATIONAL INSTITUTE FOR STROKE AND APPLIED NEUROSCIENCES

investigator.

You are also advised to check whether participation in this study would affect any indemnity cover you have or are considering, such as medical insurance, life insurance and superannuation.

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent Health and Disability Advocate. This is a free service provided under the Health and Disability Commissioner Act:

Free phone: 0800 555 050
Free fax: 0800 2787 7678 (0800 2 SUPPORT)
Email: advocacy@hdc.org.nz

Finally

This study has received Ethical Approval from the National Health and Disability Commission 16/NTA/36. If you would like some more information about the study, please feel free to contact the toll-free number on 0800 AUT HWC (288492)

Anton Green, a postgraduate research student will be conducting the interviews and the research. He is supervised by Dr Rita Krishnamurti.

You can contact; Study Manager, Susan Mahon on Phone 921 9999 ext. 7438, at the National Institute for Stroke and Applied Neurosciences (NISAN), AUT University or email smahon@aut.ac.nz

Or;

Dr Rita Krishnamurthi, Senior Research Fellow, NISAN, AUT University on 09-921-9999 ext. 7809 or email: rita.krishnamurthi@aut.ac.nz.

Study Investigators

The principle investigator for this study is: Professor Valery Feigin.
National Institute for Stroke and Applied Neurosciences (NISAN), AUT University,
Private Bag 92006, Auckland 1142



AUT NATIONAL INSTITUTE FOR STROKE AND APPLIED NEUROSCIENCES

Registration Number:	Participant Initials:	Date of Birth:
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CONSENT FORM

1. I have read/had explained to me, and understand, the Information Sheet (Version xx) for participants taking part in interviews as part of the **Prevents** 3-year follow-up study. I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.
2. I understand that taking part in this study is voluntary (my choice). I realise the study involves an interview. I may choose not to answer any questions or withdraw from the study at any time and this will in no way affect my future health care.
3. I have had the opportunity to use family/whānau support or a friend to help me ask questions and understand the study.
4. I understand that my participation in this study is confidential and that no material that could identify me will be used in any reports on this study.
5. I understand the compensation provisions for this study.
6. I have had time to consider whether to take part.
7. I know whom to contact if I have any questions about the study.
8. I understand that my GP will be contacted about my participation in this study.

I wish/do not wish (cross out one) to receive a summary of the results. I understand that there may be a significant delay between data collection and the release of the study results.

I (full name _____) hereby consent to take part in this research.

Signature
.....

Date:

Project explained by.....

Project role

Signature.....

Date

Note: A copy of the consent form to be retained by participant and a copy to be placed in the Case Record File