A Classic Grounded Theory Study exploring the Perceptions of Stress for People who have experienced a Transient Ischaemic Attack

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Declaration

I declare the work in this thesis to be my own, except where otherwise stated.

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Abstract

Background

Stress is a known risk factor for stroke, but there is a lack of understanding of the role stress plays in transient ischaemic attack (TIA). TIA is a warning sign of stroke, but effective management of risk factors can reduce the threat for the individual.

Research Aim and Questions

The aim was to explore the perceptions of stress for people who have experienced a TIA and address the following questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?
2. How has perceived stress affected the patients' physical and mental health and well-being?
3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

Methodology and Methods

The study was conducted following a classic grounded theory tradition. Thirteen semi-structured interviews were undertaken with people who had experienced a TIA. Participants were recruited from outpatient clinics located in three Scottish Health Boards.

Findings

Perceived stress was commonly experienced by participants and it was a significant feature throughout their TIA journey. Although not universally acknowledged as a contributing cause of TIA, stress formed part of their lived experiences. The presence or absence of perceived stress was an influencing force in relation to their mental and physical health and well-being. Factors that

influenced stress could stabilise or destabilise a sense of equilibrium. Equilibrium was the achievement of a balance between interdependent elements and formed the core category: the equilibrium of health and well-being for the individual.

Conclusions

The study led to the discovery of the substantive theory: if perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being. This new knowledge raises the opportunity to improve health and well-being after TIA and potentially reduce the risk of stroke.

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Chapter 1: Introduction and Background

1.0 Introduction

A transient ischaemic attack (TIA) is a warning of an increased risk of stroke which can result in disability or death (Rothwell and Warlow 2005). Of those people who experience a TIA, as many as 20% will go on to have a stroke within 90 days; half of those strokes are likely to occur within the first 48 hours after a TIA (Johnston 2007). In order to minimise the number of people who will subsequently experience a stroke, it is essential to address all the potential risk factors and implement effective preventive measures (Muir 2008; Egido et al. 2012). Preventive measures have traditionally addressed common risk factors such as high blood pressure, smoking, obesity, unhealthy diet and physical inactivity (Warlow et al. 2008). More recently there has been increasing recognition of the contribution of psychological risk factors, such as perceived stress (Booth et al. 2015; O'Donnell et al. 2010). However, currently there is a lack of awareness and understanding of the role of perceived stress and its importance for people who have experienced a TIA.

The research study's aim was to explore the perceptions of stress for people who have experienced a TIA. It uses a classic grounded theory approach (Glaser and Strauss 1967) to address the following research questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?
2. How has perceived stress affected the patients' physical and mental health and well-being?
3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

The findings are significant for clinical practice as it generates a theory from the data which helps make sense of the experience of stress for people who have experienced a TIA in order to improve their health and well-being and potentially reduce their risk of stroke.

The chapter provides an overview of the organisation of the thesis outlines the background and presents the clinical context for the research.

1.1 Organisation of the Thesis

The thesis explores the perceptions of stress for people who have experienced a TIA and the relationship between perceived stress and TIA; how stress affects physical and mental health and well-being; and what actions influence stress and have these actions made a difference. Chapter one begins with an introduction, and then outlines the background and clinical context for the research.

Chapter two presents a classic grounded theory non-committal review of the literature and the search strategy. The research literature is critiqued and synthesised, highlighting gaps and supporting the need for the proposed research study. The paucity of literature demonstrated the rationale for the study and the chapter concludes with the study aim and research questions shaped from the literature.

Chapter 3 presents the rationale for the methodological approach undertaken in the study, supported by accompanying evidence from the literature. A qualitative design was adopted following a classic grounded theory approach. This chapter explains the role of the research aim and questions in determining the methodology; and the justification for adopting a qualitative approach using grounded theory. The defining traditional components of Glaser and Strauss's (1967) original work and subsequent work of Glaser (1978; 1992) are critiqued. Finally, the decision to use a classic grounded theory or Glaserian approach is discussed. The classic grounded theory approach adopted brought a number of strengths, including a free-flowing exploration of the phenomenon, enabling concepts to emerge to realise a new theory.

Chapter 4 presents the methods in relation to the qualitative design following a classic grounded theory approach. The methods addressed the study aim and research questions. The process of gaining ethical approvals from the West of Scotland Research Ethics Service, the University of Stirling's NHS Research Ethics Committee and the local NHS Health Board research and development departments are presented. The purposive and theoretical sampling approaches to data collection via semi-structured interviews are discussed. Data were analysed using a process of coding, identifying categories and forming a core category by means of constant comparative analysis. The subsequent theoretical processes outlined contributed to the generation of a new substantive theory.

Chapter 5 presents the findings from the research which aimed to explore the perceptions of stress for people who have experienced a TIA. In line with the analysis of the findings, they reflect the figurative journey of perceived stress before, during and after the TIA as portrayed in the accounts of participants. This enabled a deeper understanding of participants' perceptions. The next part of the chapter presents the main categories which emerged to form the core category. The chapter concludes with the theoretical codes which build the new substantive theory.

Finally, Chapter six discusses the new substantive theory which emerged from the research study, creating new knowledge in the management of TIA. The chapter begins by introducing the substantive theory and the theoretical codes that shaped and built it which emerged from the analysis; then critiques the theory comparing it with current literature, theoretical frameworks and models. The chapter goes onto to discuss the limitations and strengths of the study; followed by the implications for clinical practice and the opportunities for future research.

1.2 Background

Stroke is a major health problem and second most common cause of death and disability (Hay 2017). Annually, fifteen million people worldwide suffer a stroke; of these, 5 million die and another 5 million are left permanently disabled, placing a burden on the family and the community (Mackay and Mansah 2007). In the United Kingdom (UK) approximately 150,000 people have a stroke each year; and, of those, specifically in Scotland, 12,500 people have a stroke resulting in more than 120,000 individuals living in Scottish communities with the effects of stroke illness (Chest Heart & Stroke Scotland 2016). The overall incidence of stroke is declining in many developed countries, largely as a result of improved health care services and prevention strategies (Feigin 2014). In the last decade in Scotland mortality figures show a 39% reduction in deaths from stroke; however, the absolute number of strokes continues to rise because of the ageing population (NHS National Services Scotland 2016). A TIA is a warning sign of an increased risk of stroke and currently affects 76 people per 100,000 of the Scottish population each year (NHS National Services Scotland 2016). Of those people who experience a TIA, as many as 20% will go on to have a stroke within 90 days; half of those strokes are likely to occur within the first 48 hours after a TIA (Johnston 2007). This threat can be substantially reduced preventing disability and death by comprehensive risk reduction in people who initially experience a TIA (Muir 2008).

TIA is defined as an acute loss of brain or eye function with symptoms lasting less than 24 hours (Warlow et al. 2008). It is a sudden temporary lack of blood supply to part of the brain or eye. The part of the brain or eye which is affected will determine the symptoms experienced. The potential transient symptoms of a TIA can be: weakness of one side of the body, sensory changes, difficulty speaking or slurred speech, transient blindness and unsteadiness (Warlow et al. 2008). As a TIA is a warning sign of an increased risk of stroke, awareness and early identification by patients and health care professionals is of paramount importance. Due to the transient nature of the symptoms, patients may underestimate their significance and either fail to seek medical attention or delay doing so (Kelly et al. 2001). If a patient presents to their general practitioner with symptoms of a TIA, an urgent referral is made to the nearest TIA outpatient clinic to establish diagnosis. Evidence from three large scale studies demonstrated that urgent assessment, diagnosis and early initiation of preventive treatments after TIA was associated with an 80% reduction in the risk of stroke; and for every 100 patients treated in the first day after a TIA, one might expect to prevent 5-10 strokes (Rothwell et al. 2007; Kennedy et al. 2007; Lavallee et al. 2007). This makes people who experience a TIA a key target group on which to focus preventive measures and health promotion.

Stroke prevention following TIA is largely carried out in an outpatient clinic setting led by stroke physicians (Gillham and Endacott 2010). A survey of TIA clinic provision in the United Kingdom (UK) demonstrated that there was wide variability in terms of TIA service structure, access to investigations, and the types and number of personnel involved in the clinic (Beech et al. 2007). Medical treatment and secondary prevention strategies following TIA are based on addressing risk factors and the underlying cause of the event, if known (Rothwell et al. 2006). However, the emphasis on urgent assessment, diagnosis and early initiation of preventive treatments (Rothwell et al. 2007; Kennedy et al. 2007; Lavallee et al. 2007) may have resulted in a less patient-focused response (Christiansen 2014). This has seen lifestyle issues being poorly addressed, evidenced in patient's case notes with lifestyle discussions being recorded in only 37% of consultations (Rudd et al. 2004). This suggests less of a patient-focused approach to addressing all the potential risk factors. The lack of emphasis on lifestyle issues has diminished the importance of psychosocial factors, such as stress, for those who have experienced a TIA (Lawrence et al. 2011; Tan and Morgan 2015). In order to reduce the threat of a subsequent stroke event following TIA it is important to address all the patient's potential risk factors in the prevention and treatment of the disease (Egido et al. 2012).

1.3 Clinical Context

In my previous role as Stroke Nurse Consultant in NHS Lanarkshire (from 2007–2016) I was responsible for undertaking two TIA clinical sessions each week. I was the only nurse holding outpatient clinics for TIA patients (normally undertaken by a medical consultant), which involved a full clinical assessment, treatment, preventive measures and follow-up support. The NHS Executive (1999) produced guidance on nurse consultant posts and identified the key components of the role as: expert practice; leadership and consultancy; education, training and development; practice and service development; and research and evaluation. Expert practice was recognised as an essential element and the guidance recommended that 50% of the role should be in direct patient contact. My clinical practice within the TIA outpatient clinic consultations involved seeing patients with a suspected TIA and undertaking a full assessment, and performing a physical examination to form a clinical impression. This is particularly relevant to the diagnosis of TIA which is based on obtaining an accurate health history (Hankey 2002). My role also involved arranging appropriate investigations to assist in establishing a diagnosis of TIA and treating any underlying causes. Although I had an empirical focus, aesthetic and personal knowledge were also an important part of my consultation (Carper 1978). I focused on effectively listening to the patient's story, to interpret their illness and experiences, and to identify what mattered most to them. For patients with a new diagnosis of TIA, the risk of stroke was reduced using a range of prevention approaches which included medical and lifestyle interventions and behavioural changes (Scottish Intercollegiate Guidelines Network 2008). The initiation of preventive treatments was based on an evidence-based prevention protocol developed by NHS Lanarkshire (2010); this included the use of interventions such as anti-platelet drugs, and cholesterol and blood pressure lowering medication. Lifestyle behaviours were discussed with a focus on stopping smoking, reducing alcohol intake, increasing physical activity, weight management and a healthy diet. However, the impact of psychosocial factors such as stress, were not routinely considered. From discussions with clinicians this was attributed to a lack of evidence and consensus on the association between perceived stress and TIA, although in consultations, patients often referred to the stresses they had experienced or were experiencing. It seemed more cognisance needed to be taken to consider the impact of perceived stress in relation to their TIA; how stress was affecting their health and well-being; and what actions could potentially have an impact on stress. In line with best practice, a TIA information pack was provided and verbal advice specifically on stroke recognition was given to the patient and their family (Smith et al. 2008). Finally, referral for subsequent follow-up to consolidate and support preventive measures was initiated.

1.4 Summary

A TIA is a warning of an increased risk of stroke. In order to minimise the number of people who will go on to experience a stroke it is essential to address all their potential risk factors and implement effective preventive measures (Muir 2008; Egido et al. 2012). However, preventive measures have focused more on medical treatments and surgical interventions. There has been a lack of emphasis on considering the importance and impact of psychosocial factors, such as stress, for those who have experienced a TIA. Having introduced the thesis and presented the background and clinical context, the next chapter critiques the relevant literature.

Chapter 2: Literature Review

2.0 Introduction

In this chapter the classic grounded theory non-committal review of the literature and the search strategy utilised is presented. The research literature is critiqued and synthesised, highlighting gaps and supporting the need for the proposed research study. The chapter concludes with the study aim and research questions shaped from the review of the evidence.

2.1 A Non-committal Review and Search Strategy

A classic grounded theory non-committal review of the literature was undertaken to explore current understanding of the relationship between perceived stress and TIA. The non-committal literature review was to establish a gap in the evidence base to inform and shape the research aim and questions, develop the research proposal and to gain research and ethics approval. The concept of a non-committal review was described by Urquhart (2013) and means reviewing key literature from your theoretical starting point that is non-committal and allows the emerging theory to determine the relevance of the literature. A moderate non-committal review was carried out on the understanding that the researcher aimed to prevent the literature review influencing the research process by keeping immersed in the data and through theoretical sensitivity (see section 4.5.1) and reflexivity (see section 4.8). Subsequently, during the analysis of the findings the literature was reviewed to develop the emerging theory by comparing it with current literature, theoretical frameworks and models. Glaser (1992) advocates interaction with relevant literature to compare similarities and convergences with findings to mature analysis and theory development (see section 4.7).

The search strategy involved systematic searches of published papers indexed in: MEDLINE, EMBASE, CINAHL, PsycInfo, Cochrane Database of Systematic Reviews, British Nursing Index. This was performed at the outset of the study and later to develop the theory to serve the grounded theory methodology. Searches were restricted to English language published research between 1980 and 2012. Further periodic searches were undertaken between 2012 and 2018. Literature was searched using a combination of the following search terms: transient ischaemic attack or transient

ischemic attack, TIA, minor stroke, stroke and stress, perceived stress, psychological stress, psychosocial stress. A manual search of selected papers' reference lists was also performed.

2.2 Perceived Stress and TIA

Stress is a general term and has been defined as feeling irritable, filled with anxiety, nervousness or as having sleeping difficulties as a result of conditions at work or at home (Rosengren et al. 2004). Stress can result in a range of physiological, emotional and behavioural responses; and the ability to cope with stress can vary from person to person. Whilst most people suffer with stress at times, sustained stress over a longer period is thought to be more detrimental to health (Carlson 2001). Within the published literature, alternative definitions of stress are used, with little agreement on what the term actually means or how it should be measured (Truelsen et al. 2003). This lack of agreement makes it challenging to draw more definitive conclusions from studies to deliver an evidence-based approach in clinical practice.

Public perception highlights stress as a commonly perceived risk factor for stroke. This was demonstrated by Muller-Nordhorn et al. (2006) who undertook a large population-based survey to assess knowledge of risk factors for stroke. 28,090 (37% response rate) randomly selected residents in Berlin, Germany, who were 50 years of age or older, participated. Knowledge was assessed using a standardised questionnaire. The results showed 68% of participants were able to name one or more correct stroke risk factors. Stress was named by approximately one-fifth (18%) of participants. However, a limitation with this type of survey is response biases; responders were perhaps more interested in health issues and therefore possessed a higher knowledge compared to non-responders. The Muller-Nordhorn et al. (2006) survey builds on previous studies which identified stress as a frequently-named risk factor for stroke, by both the lay public and high-risk patients (Pancioli et al. 1998; Gupta and Thomas 2002; Sug Yonn et al. 2001). Sug Yonn et al. (2002) went on to undertake a qualitative study to gain a deeper insight into people's views on stroke risk factors. Thirty-five people participated in four focus groups. They reported similar understanding of risk factors; mentioning stress as well as diet, high blood pressure, age and smoking as causes of stroke.

Psychosocial stressors caused by significant life events, relationships, natural disasters or occupation are recognised as potential contributors to an individual's perceptions of stress. In a case-control study, House et al. (1990) used a standardised method of identifying and rating stressful experiences

based on a semi-structured interview from a stratified random sample of 113 stroke patients, with 109 control group members. It was noted that events which were severely threatening in the long-term were significantly more common in the stroke patients than in the controls. A limitation of the study is reporting bias where selective recall is possible among patients who believe their condition to be stress-induced. Other studies have also linked stress and stroke incidence to significant life events; such as getting divorced or being widowed (Engstrom et al. 2004); natural disasters, such as flood calamity in China (Chen et al. 2004) and severe earthquakes in Japan (Tsuchida 2009). A study of 6553 Japanese workers examining job stress levels found that jobs that involved high demands and lower levels of personal control were at greater stroke risk, even after controlling variables were taken into account (Tsutsumi et al. 2011). Previously a study by Schneck et al. (1995) described a potential relationship between increased stroke risk and difficulties coping with stress at work. This retrospective case-control study also suggested that the risk was cumulative, so persons with greater perceptions of chronic work stress had a greater stroke risk. Overall, psychosocial stressors are under-investigated compared to more established risk factors for stroke (Tan and Morgan 2015). From the literature review the relationship between psychosocial stressors and stroke is not fully understood.

Stress has been linked to circulatory diseases such as heart attack, high blood pressure and widespread hardening of the arteries (Rosengren et al. 2004; Stansfield et al. 2002; Iso et al. 2002). The INTERHEART study was a large case-control study of 11,119 patients with a first heart attack and 13,648 matched controls from 52 countries (Rosengren et al. 2004). Participants completed a structured questionnaire and had a physical examination. Subjective perceptions of stress were assessed by four simple questions about stress at work and at home, financial stress, and major life events in the past year. Participants were asked to report how often they had felt stress, using graded response options. The study found the presence of psychological stressors was associated with an increased risk of heart attack that was consistent across regions and ethnic groups. The researchers suggested approaches aimed at modifying psychological stressors should be adopted in clinical practice.

O'Donnell et al. (2010) reported on an international multi-centre case-control study on the traditional and emerging, modifiable and non-modifiable, risk factors for stroke. The study comprised 3000 stroke patients and 3000 controls with no history of stroke. Cases were patients with acute first stroke within 5 days of symptoms onset and 72 hours of hospital admission. All participants completed a structured questionnaire and had a physical examination consistent with

the INTERHEART study (Rosengren et al. 2004). Odds ratio and population-attributable risks (PAR) were calculated for the association for all strokes with the selected risk factors. The findings identified ten risk factors for stroke; and clustering of these risk factors was associated with 90% stroke risk. These were: high blood pressure, smoking, waist-to-hip ratio, unhealthy diet, physical inactivity, diabetes mellitus, excessive alcohol intake, depression and stress (PAR 4-6%), cardiac causes and high ratio of high-density lipoprotein to cholesterol. The first five risk factors listed accounted for more than 80% of the global risk of all stroke. The addition of the subsequent five other risk factors (which included stress) raised the PAR from 80% to 90%. Stress was associated with increased risk for all types of stroke. The researchers acknowledge that the study sample size was too small to gain a deeper understanding of the role of stress in stroke or any variation between different geographical regions or ethnic groups.

More recently, a systematic review and meta-analysis of research studies (Booth et al. 2015) indicated that perceived stress was independently associated with stroke; although there was a lack of evidence to established perceived stress as a risk of factor for TIA. Fourteen quantitative studies were included in the meta-analysis, of these, ten were prospective cohort studies and four were case-control studies. The overall pooled adjusted effect estimate for risk of total stroke in subjects exposed to general or work stress or to stressful life events was 1.33 (95 % confidence interval, 1.17, 1.50; $P < 0.00001$). Prior to the systematic review, several previous studies suggest that perceived stress was associated with increased risk of stroke (Surtees et al. 2007; House et al. 1990; Harmsen et al. 1990; Engstrom et al. 2004). However the results were conflicting and inconsistent with regard to definitions and measurement of stress, features of study design and quality and conclusions drawn. The systematic review provided clarity for the first time that perceived stress related to general or work stress or to stressful life events was independently associated with an increased risk of stroke.

Jood et al. (2009) found there was a significant association between perceived stress and stroke, and a more adverse risk factor profile. They found participants who had experienced a stroke were more likely to smoke, be overweight, less physically active and to be on high blood pressure treatment. However, the suggestion that the association between stress and stroke could be purely due to increased levels of other stroke risk factors is unlikely because such risk factors were controlled for in the statistical analyses. Previously, Truelsen et al. (2003) surveyed 5604 men and 6970 women (20-98 years of age) to examine the association between self-reported stress and the risk of stroke. The response rate was 67%. Subjects who reported being stressed were also more likely to have an

adverse risk factor profile. They were more likely to smoke, to have a higher intake of alcohol, less physically active and on high blood pressure treatment.

Overall, current evidence indicates that perceived stress is associated with an increased risk of both heart disease and stroke. However, despite a TIA being a warning sign of an increased risk of stroke, there is limited research exploring the role of perceived stress in relation to TIA. Everson-Rose et al. (2014) investigated chronic stress, as well as depressive symptoms, anger, and hostility in relation to TIA and stroke in middle-aged and older adults. A population-based cohort study of 6749 adults, aged 45 to 84 years and free of clinical cardiovascular disease at baseline, conducted at six United States sites. Chronic stress was assessed with standard questionnaire. The primary outcome was TIA or stroke during a median follow-up of 8.5 years. 48 transient ischemic attacks and 147 strokes occurred during follow-up. Higher levels of stress were associated with significantly increased risk of TIA or stroke in middle-aged and older adults. However, the study limitations included relatively small numbers of TIA events. Also, psychosocial factors were found to be challenging to measure and measurement error may have occurred. The COPerSS study (Booth et al. 2014) used a mixed-methods case-controlled design to examine the extent and nature of self-reported perceived stress in people with TIA. The mixed-methods study undertook a cross-sectional anonymous survey of perceived stress which was completed by 1405 attendees at ten TIA outpatient clinic sites in six different health boards across NHS Scotland. Age and sex-matched case controls were also recruited from primary care-based treatment room attendees. Sixteen semi-structured interviews were conducted with a sub-sample of clinic attendees who had been given a diagnosis of TIA. Qualitative data was analysed using a constructivist grounded theory approach (Charmaz 2006). The overall findings suggested that perceived stress is commonly experienced, however it is not a particular feature in the causation of TIA. Participants did report an increase in perceived stress following the diagnosis of TIA. Uncertainty was interpreted as the key identified stressor, coming from a variety of sources. The pattern of reporting was consistent across the different types of stress investigated including, stress at home, work-related stress, financial stress and stressful life events. However, the study found the control group of treatment room attendees reported the highest levels of stress. It was suggested that the stress was associated with deprivation as the treatment rooms were located in particularly deprived areas.

No qualitative studies were found exploring the perceptions of stress for people who have experienced a TIA. However, there are qualitative studies which have explored the lived experience of TIA (Gibson and Watson 2012; Croot et al. 2014; Crowfoot et al. 2015). The findings suggest that

participants experience a wide range of emotions, a loss of confidence and uncertainty in the light of increased stroke risk. Gibson and Watson (2012) grounded theory study explored the experiences of sixteen patients who had experienced a TIA. Themes that emerged included, the perceived suddenness and shock involved, fear for the future, taking defensive action to avoid further problems and changes to perception of health. Although TIA is a transient event studies found that having experienced a TIA permanently changed people's quality of life and their perception of their health (Gibson and Watson 2012; Croot et al. 2014). Those who experience a TIA may also experience depression, anxiety, cognitive problems, memory problems, fatigue and difficulty coming to terms with the change in their health status (Allen et al. 2002; Boter et al. 2004; Arts et al. 2008; Pendlebury et al. 2011; Moran et al. 2014).

The literature review revealed that there is a lack of evidence into the role stress plays in TIA. Currently, there are limited research studies exploring the perceptions of stress for people who have experienced a TIA. The evidence as is unclear as to whether stress is associated with an increased risk of TIA; although there is a suggestion that perceived stress may increase following diagnosis. No qualitative studies have explored in-depth the relationship between perceived stress and TIA. Therefore the paucity of literature in the field of perceived stress in relation to TIA demonstrated the need for further research.

2.3 Influencing Perceived Stress

On reviewing the evidence there is a lack of understanding about what, specifically, people who have experienced a TIA can do to influence stress. However, there was literature considering the ability to influence stress in relation to associated conditions of stroke and high blood pressure. Surtees et al. (2007) found that the ability to adapt to stress is a potentially important aspect in relation to stroke risk. In a large population-based prospective cohort study, 20,629 participants in Norfolk, UK, aged 41-80, were recruited to test the hypothesis that a sense of coherence, a marker of social stress adaptive capacity, is associated with the incidence of stroke. A questionnaire was used that assessed social and psychological circumstances and included a 3-item sense of coherence scale. During the follow-up (mean 7.1 years), 452 participants (2.2%) experienced either a fatal or non-fatal stroke. Completed sense of coherence scale scores were available for 20,303 participants (98.4%). A strong sense of coherence was associated with a 25% reduced rate of stroke incidence. The associated risk of stress was less relevant in short-term and perhaps more associated with the

cumulative effect over time. The study findings concur with previous smaller studies. For example, Andre-Petersson et al. (2001) found men with high blood pressure who failed to find successful strategies in stressful situations were vulnerable to the damaging effects of stress and thereby at an increased risk of stroke. Equally Everson et al. (2001) found that middle-aged men with excessive sympathetic reactivity to stress had a 72% greater risk of stroke. These studies highlight adaptation to adverse event exposure is associated with a reduced rate of stroke incidence. A study by Schneck et al. (1995) suggest that having a good social network or access to support structures decreased stroke risk, which possibly reflects a better adaptive response to stressful life events. The findings suggest the better people are at adapting and managing their response to stress, the greater the benefits to health and well-being.

A lack of knowledge surrounding the role of perceived stress and TIA means a potential gap in awareness and understanding by both patients and health care professionals. Joice et al. (2007) suggests this gap in understanding can lead to a mismatch in beliefs between nurses and patients. An example is that nurses reported smoking to be a major cause of stroke, whereas patients reported stress to be a factor; therefore if a person believes smoking relieves stress then he or she may be unlikely to give up. Joice et al. (2007) proposes nurses require to have understanding of stress and greater sensitivity to patients' beliefs to optimise recovery. If stress is identified as a risk factor for a patient, health care professionals need to be able to provide more information and explore strategies to help. The medicalised approach to TIA management has resulted in a focus on medical treatments and surgical interventions, and addressing some of the well-recognised risk factors such as high blood pressure. However, the literature suggests targeted therapeutic interventions have the potential to reduce the risk of stroke, therefore the identification of effective strategies are needed to help individuals reduce perceived stress (Lawrence et al. 2011). It is proposed that by combining medical therapies with interventions designed to support patients to make changes to lifestyle factors and behaviours may improve health benefits (Ovbiagele et al. 2004; Joubert et al. 2009). However, at present, due to the lack of attention given to stress in clinical practice it has failed to be assessed, for example by asking directly about the presence of stress, its nature, frequency and duration (Jood et al. 2009). It has also been suggested there is value is asking patients to rate their stress intensity (Truelsen et al. 2003). Further research is required to identify strategies that are effective in helping individuals reduce perceived stress after a TIA (Lawrence et al. 2011; Tan and Morgan 2015).

Evidence-based guidelines recommend that lifestyle interventions for TIA should be comprehensive, personalised and informed by behaviour change theory (Scottish Intercollegiate Guidelines Network, 2008). Lawrence et al. (2009) conducted a cross-sectional survey of stroke nurses' practice which found they focused on some but not all the risk factors; with the majority of respondents addressing tobacco use and alcohol consumption. However, limitations of the study included: the inability to verify, clarify or expand upon responses from the anonymous postal survey; and a relatively small sample size of specialist nurses. In an exploration of patients and family members' views of lifestyle beliefs and behaviours following stroke, Lawrence et al. (2010) also found for prevention interventions to be effective, health care professionals require to understand psychological processes and influences, and use appropriate behaviour change theories to inform their content and delivery. Interestingly, in this study, a few patients and family members described tobacco and alcohol as having stress-relieving properties. Rarely were health care professionals perceived to exert an influence on lifestyle beliefs and behaviours of patients. However the findings highlighted the powerful nature of family members to influence lifestyle behaviours of individuals. A subsequent systematic review undertaken by Lawrence et al. (2015) concluded that there are benefits to be derived from multimodal secondary prevention interventions. However, further high quality trials providing comprehensive detail of interventions and outcomes, are required.

This review of the literature suggests if people are able to adapt and manage their response to stress, the greater the potential health and well-being benefits. However, further research is required to identify strategies and lifestyle interventions that are effective in helping individuals reduce perceived stress after TIA.

2.4 Conclusion

This chapter presented a 'non-committal review' of the literature and explored current understanding of the relationship between perceived stress and TIA. The interplay between perceived stress and TIA is largely under-investigated with a lack of theoretically informed research. The current studies available lack in-depth qualitative detail of perceptions of stress for people who experienced a TIA. Little is known about the role of stress on the health and well-being of people affected. There is also a lack of evidence to guide clinical practice in relation to the optimum approach to influence and manage stress after TIA and reduce its impact. The paucity of evidence in the field of perceived stress in relation to TIA demonstrated the need for this research and hence the

focus of this thesis. The research is required to address gaps in current knowledge with a view to informing clinical practice in the management of TIA and potentially reduce the risk of stroke.

The review of the literature informed and shaped the research aim and questions. The study's aim was to explore the perceptions of stress for people who have experienced a TIA and to address the following research questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?
2. How has perceived stress affected the patients' physical and mental health and well-being?
3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

This chapter presented a classic grounded theory non-committal review of the literature and the search strategy utilised. The research literature was critiqued and synthesised, highlighting gaps and supporting the rationale for the proposed research study. The critique of the literature highlighted few studies have explored the relationship between perceived stress and TIA. The paucity of literature demonstrated the need for the study and the chapter concluded with the study aim and research questions shaped from the evidence. The rationale for the methodological approach undertaken in the study, supported by accompanying evidence from the literature, will be discussed in the next chapter.

Chapter 3: Research Methodology

3.0 Introduction

This chapter presents the rationale for the methodological approach undertaken in the study, supported by accompanying evidence from the literature. A qualitative design was adopted following a classic grounded theory approach to address the study aim and research questions. The purpose of grounded theory methodology is the generation of theory from the data which advances understanding of the phenomena (Glaser and Strauss 1967). This chapter explains the role of the research aim and questions in determining the methodology; the justification for adopting a qualitative approach using grounded theory; and finally, the decision to use a classic grounded theory or Glaserian approach that stems from the original work of Glaser and Strauss (1967).

3.1 Research Aim and Questions

The research aim and questions were the main determinants for the choice of methodology, as different research approaches are required to address different types of questions (Gelling 2015). The kinds of research questions asked in quantitative and qualitative research are typically different, with research questions being more specific in quantitative research and more open-ended in qualitative research. However, both quantitative and qualitative research questions are fundamentally concerned with answering questions about the nature of social reality (Bryman 2012). Quantitative questions seek to answer how and why a specific experience occurs (Miller 2010), whereas qualitative questions aim to discover meaning and understanding, often using words such as what and how, to explore and describe (Gelling 2015). The methodological approach was designed to address the research aim. The research aim was to explore the perceptions of stress for people who have experienced a TIA and to address the following research questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?
2. How has perceived stress affected the patients' physical and mental health and well-being?
3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

The research questions originated from a number of sources. Firstly, the questions were shaped by the researcher's own clinical experience of managing TIA. The common risk factors of TIA are typically addressed by clinicians, but rarely discussed was the influence of stress or how to manage it. On discussion with clinicians, although stress was a recognised risk factor for stroke (Booth et al. 2015; O'Donnell et al. 2010), there was a lack of evidence and consensus on the relation between perceived stress and TIA. Secondly, this research study aimed to achieve an in-depth exploration of the role of perceived stress in people who had experienced a TIA in order to make new discoveries, develop theory and generate new knowledge. Finally, a 'non-committal review' of the literature established a gap in current knowledge into the role of perceived stress in relation to TIA.

The research questions aim to explore the perceptions of stress for people who have experienced a TIA in order to discover new meaning and understanding. The research questions informed the research methodology and approach to analysis of the data in order to ensure those questions were addressed. The justification for a qualitative methodological approach is presented in the next section.

3.2 Justification of a Qualitative Approach

Social reality can be approached in different ways and it is therefore essential to consider the appropriateness of different approaches when embarking on research (Bryman 2012). Lacey (2015) argues that the choice of research methodology is the most important stage of the research process as it affects all other aspects such as: data collection, data analysis, the generation of knowledge and the relevance to clinical practice. The main quantitative and qualitative methodologies are based on different philosophical traditions and have emerged from different historical backgrounds (Lacey 2015). When researchers consider the appropriateness of the different approaches it is important to remember they bring certain beliefs and philosophical assumptions to the research which will also inform the choice of methodological approach (Creswell 2013).

Quantitative and qualitative approaches have both their advocates and critics (Parahoo 2014). Debate has persisted in nursing as to whether quantitative or qualitative research has made a more significant contribution to increasing and developing the professional knowledge base (Parahoo 2014; Topping 2015). However, both quantitative and qualitative approaches are effective methods of progressing nursing knowledge and do not divide but instead strengthen enquiry (Topping 2015).

Quantitative research is based upon a positivist philosophy and qualitative research is based upon an interpretative philosophy (Topping 2015). Positivism is described as a theoretical position derived from 18th century philosophy, believing that scientific truth can only be derived from that which is observable by human senses. Positivists would apply the methods of traditional scientific enquiry to the study of human behaviour (Gerrish and Lathlean 2015). In contrast, interpretative philosophy is defined as the belief that human beings continuously interpret and make sense of their environment, and so research into their behaviour and social processes must take the meaning of events into account (Gerrish and Lathlean 2015). Therefore, positivist and interpretive approaches to research have their roots based in different assumptions about social reality (Bryman 2012).

Traditionally, the work of sociologists, psychologists and the medical professions has been based in the scientific positivist tradition. The positivist approach explains the natural and social worlds through the testing of hypotheses and the development of theories. Quantitative research comprises an array of methods that adopt a systematic approach to the enquiry of social experience, using numerical or statistical information (Watson 2015). It is a formal, objective, rigorous and systematic process for generating data about people, events or things, which are numerical and can be statistically interpreted to establish the strength of the relationship between variables (Grove et al. 2013). Although, clearly, quantitative methods can address situations and events where there is evidence of causality, there is a danger of missing a wealth of rich data that allows interpretative understanding of a phenomenon. The interpretative perspective acknowledges and recognises the subjective and naturalistic components of the world, and the different meaning which people take from them. Qualitative research allows an in-depth exploration of the way people interpret and make sense of their experiences and the world in which they live (Holloway and Wheeler 2010). Knowledge of these life experiences and processes increases understanding and provides a basis for development.

Having explored the research literature and considered the philosophical traditions and the characteristics of both quantitative and qualitative research (Parahoo 2014; Gerrish and Lathlean 2015), the researcher opted for a qualitative design for the research. A qualitative approach is often applied in nursing in an area where little is known and where the focus of the study is on personal experiences, in this case the perceptions of people who have experienced a TIA. The research questions suggest an exploration of human experience and a qualitative approach enabled an in-depth discovery of the way people interpreted and made sense within their own social contexts (Gelling 2015).

3.3 Choosing a Qualitative Approach

A variety of qualitative methodologies have emerged over the years, offering a diversity of approaches to researchers (Creswell 2013). While these approaches can share underlying assumptions, they differ in terms of their research techniques and the contribution they make to knowledge development (Gerrish and Lacey 2006). The most common traditional qualitative approaches used in nursing research are grounded theory and phenomenology (Creswell 2013; Parahoo 2014). However, there are other approaches that have emerged too, including ethnography and case studies (Creswell 2013).

3.3.1 Grounded Theory

Grounded theory is a general research method which can be used on any data or combination of data. However, growing use has most frequently linked it to qualitative data and it is seen as a qualitative method using symbolic interaction (Glaser 1999). The aim of the grounded theory approach is the generation of theory grounded in reality (see section 3.4). The researcher starts with an area of interest, in this case the perceptions of stress for people who have experienced a TIA, collects the data to address the research questions and allows the relevant ideas to develop; rather than commencing with preconceived theories and hypotheses to be tested for confirmation. The theory generated is a third perceptual-level theory; as the data forms categories, the categories transcend to a core category which has an underlying pattern, and finally the substantive theory is generated (Glaser 1999). The defining components of grounded theory are: simultaneous involvement of data collection and analyses using constant comparison methods; memo-writing to elaborate categories; sampling aimed towards theory construction; and developing a theory (Glaser and Strauss 1967; Urquhart 2013; Birks and Mills 2015; Holton and Walsh 2017). The overall purpose of grounded theory methodology is the generation of theory from the data which has explanatory power and advances understanding of the phenomena (Glaser and Strauss 1967).

3.3.2 Phenomenology

Differing from grounded theory, phenomenology attempts to uncover how the person articulates what he or she is experiencing to make sense of the world around them (Bryman 2012).

Phenomenology emerged as a distinct philosophical research tradition in the early part of the 20th century with Edmund Husserl being credited as the central founder (Holloway and Todres 2006). Phenomenology provided a philosophical rationale for studying human experience on its own terms as a focus of study. The research begins by gathering examples of everyday experiences, known as lifeworld or lived experiences, which are then described and studied in-depth. The purpose of focusing on such experiences is to find insights that apply more generally beyond the cases studied in order to emphasise what we may have in common as human beings. When phenomenologists present their findings they usually express this in such a way as to show how a number of common themes are related (Todres 2005).

3.3.3 Justification of a Grounded Theory Approach

Determining the best qualitative approach to utilise for this study was informed by a number of things. These included considering the aim and the research questions; a critique of the varying qualitative approaches and their characteristics; engagement with other academic researchers working in the field; and guidance from clinical doctorate supervisors. Both grounded theory and phenomenology have merit and credibility in the field of research, however, there is a fundamental difference between them. Grounded theory aims to develop a theory from the data, whereas phenomenology aims to understand the 'essence' of the experience. The rationale for undertaking the research was to explore the participants' perceptions of stress in relation to TIA to generate meaningful insights; to go beyond description and build a theory about the phenomena to generate new knowledge to inform the field of clinical practice. Therefore, the qualitative design of grounded theory was determined the most suitable to address the research aim and questions in this study.

The purpose of grounded theory methodology is the generation of theory from the data which advances understanding of the phenomena (Glaser and Strauss 1967). The research aim and questions were a critical factor in determining the methodology and in the justification for adopting a qualitative approach using grounded theory. The key features of grounded theory as identified by Glaser and Strauss (1967) prevail today, despite diverse evolution of the methodology in practice. These are: inductive thinking; simultaneous involvement of data collection and analyses using constant comparison methods; memo-writing to elaborate categories; sampling aimed towards the generation of a theory (Glaser and Strauss 1967; Urquhart 2013; Birks and Mills 2015; Holton and Walsh 2017).

Since the early 1990s, Glaser and Strauss differ on the development of grounded theory from a philosophical perspective. Their key differences are in relation to Strauss and Corbin's (1998) coding and analytic procedures and shift of focus from the analysis of social process to the production of substantive generalisations. Glaser (1992) retains his view that the creative researcher should trust the data and theory will emerge, which he summarises as 'emergence versus forcing'. Glaser (1992) believes that any attempt to force analysis and subsequent theory from the data will result in regression of analytic thought and activity. Glaser (1992) is adamant that the relevance of data must be discovered by identifying credible relationships between concepts and sets of concepts. The relevance of data should not be forced by the premature introduction of theoretical ideas. He advocates that the researcher should be patient and invest in the process of theoretical sensitivity, coding and development of categories.

Critiques of grounded theory note a lack of methodological consistency or integrity. Wilson and Hutchinson (1996) are robust in their critique of studies that are presented as a grounded theory but are in fact descriptive studies. In their critique, Wilson and Hutchinson (1996) list six types of methodological mistakes in grounded theory, which are: muddling qualitative methods; generational erosion (straying from the key features of grounded theory); premature closure of analysis; overly generic analysis (that is not context specific); importing concepts (with failure to provide an original and grounded interpretation); and methodological transgression. Dey (1999) agrees with Wilson and Hutchinson (1996) and identifies a further range of issues. The issues he identifies are principally the imposition of preconceived conceptual frameworks, inflexible focus on methodological rules in the tradition of Strauss and Corbin (1998), and failure to analyse and conceptualise the data fully. Perhaps the most notable potential flaw Dey (1999) and Wilson and Hutchinson (1996) identify is in relation to grounded theory being referred to as an analytic method or technique rather than a methodology.

There were a number of advantages for adopting a grounded theory design for the research. Firstly, the grounded theory methodology is used extensively in social science, nursing and other academic domains as shown in the literature (Gibson and Watson 2012; Urquhart 2013; Birks and Mills 2015; Holton and Walsh 2017). It remains the most commonly adopted qualitative approach over other approaches amongst nurses; and therefore relevant to clinical practice. Glaser (1999) believes this is because nurses are increasingly becoming disaffected with evidentiary proof research because it is

not producing findings that make health care better. Many grounded theory studies are now changing clinical practice as there is considerable fit between the core elements of nursing practice and the underpinning principles of grounded theory (Gelling 2011); for example, imposing treatment paradigms on patients that do not fit their lifestyles and are therefore ignored. This is changing to designing regimes that fit their lifestyles, so there is improved concordance (Glaser 1999).

Secondly, another advantage is grounded theory frees and empowers the researcher to be a theorist. Glaser and Strauss (1967) argue that grounded theory has the capability to generate theory grounded in data from the field, particularly in relation to social interactions and social processes. The process of theory generation should be dominated by induction to discover, rather than test theory by deduction. Grounded theory demands that theory be developed directly from data in close relationship with the phenomena being examined. Glaser and Strauss (1967), Glaser (1992) and Strauss and Corbin (1998) all consider that constant comparative analysis can be used to generate two types of theory: substantive and formal. The research study focused on generating substantive theory. Substantive theory is related to a specific area and context of study or 'everyday life'. Whereas, formal theory is generated and sustained by linking substantive theories and developed for conceptual or wider areas of sociological inquiry, for example stigma (Glaser and Strauss 1967). The key distinguishing characteristic of substantive and formal theory is their degree of generality. Once the researcher has generated a grounded theory for what is going on in a substantive area, no one can say different and new data can just be compared to the theory. This is not offensive to people in the field of practice as it helps them to see how apparently disparate facts have an underlying uniformity (Glaser 1999). It would be offensive to tell them in a descriptive way what they already know, but grounded theory is persuasive as it gives them a way in which to conceptualise the pattern underlying diverse facts, empowering them more (Glaser 1999). Therefore, the research study focused on generating substantive theory related to a specific area and context of the study.

3.4 The Origins of Grounded Theory

In their pioneering book 'The Discovery of Grounded Theory' (1967), Barney Glaser and Anselm Strauss first articulated their methodological strategies. They defined grounded theory as:

"The discovery of theory from data, systematically obtained and analysed in social research"
(Glaser and Strauss 1967, p.1).

It derives its name from its method of grounding theory in data in order to contribute to closing the gap between theory and reality. Glaser and Strauss's (1967) work was revolutionary as it led the way in providing guidance for qualitative data analysis with analytic and research strategies. The key principles of grounded theory were: the need to reach out into the field; the importance of theory grounded in reality; the development of a discipline; the nature of the experience; the active role of persons in shaping the worlds they live in; an emphasis on the change process; the variability and complexity of life; and the interrelationships between meanings and actions.

Grounded theory is underpinned by the concept of symbolic interactionism. Symbolic interactionism focuses on the processes of interaction between people exploring human behaviour and social roles (Mead 1934). It explains the meaning of events within people's natural setting, developing theory from data that has been methodically obtained from the real life setting. Mead (1934) was the main proponent of symbolic interactionism, which sees members of society affecting the development of a person's social self by their expectations and influence. People share their attitudes and responses to particular situations with members of their group. Hence members of a community analyse language, appearance and gestures of others and act in accordance with their interpretations. On this basis of these perceptions they justify their conduct and this conduct can only be understood in context. Grounded theory therefore stresses the importance of the context in which people function. Symbolic interactionism links to qualitative research methods where researchers must see the situation from the perspective of the participants rather than their own. Researchers use grounded theory to investigate these experiences as well as the individual's perceptions, ideas and thoughts about them (Holloway and Wheeler 2010).

3.5 Justification of a Classic Grounded Theory Approach

Since grounded theory was first developed (Glaser and Strauss 1967) there have been a number of adaptations and evolutions of the approach. These presented departures from the original grounded theory methodology and created a complicated intellectual history as they originate from different ontological foundations (Hunter et al. 2011). Researchers deciding to use grounded theory are faced with a difficult decision regarding which version of grounded theory to use. This can prove

challenging given the complexities of the inherent philosophical debates and the ambiguous and conflicting use of grounded theory 'versions' within the literature. Whilst it is beyond the scope of this thesis to fully explore and discuss the adaptations and evolutions of grounded theory, the main versions are as follows:

1. Classic grounded theory or Glaserian approach – representing grounded theory in a pure form that stems from the original work in the 1960s (Glaser and Strauss 1967; Glaser 1978; Glaser 1992; Holton and Walsh 2017).
2. Straussarian grounded theory – representing the first main departure from classic grounded theory, offering clear procedures and a defined coding paradigm drawing on a huge fund of 'coding families.' (Strauss and Corbin 1990; Strauss and Corbin 1998; Corbin and Strauss 2015).
3. Constructivist grounded theory – a further remodelling of the grounded theory approach, rooted in pragmatism and relativist epistemology, assumes that neither data nor theories are discovered, but are constructed by the researcher as a result of his or her interactions with the participants (Charmaz 2006).

Glaser (1992) is a strong advocate for the original approach to grounded theory and the emergence of theory. However, Strauss worked with Corbin to revise and clarify the data analysis process (Strauss and Corbin 1990), as data analysis was only loosely described by them in their original joint work (Glaser and Strauss 1967). Glaser (1992) strongly contested Strauss and Corbin's (1990) revised version of grounded theory approach. Firstly, he objected to the use of a coding paradigm and the grouping process of categories which was prescriptive and formulaic. Secondly, Glaser disagreed with the forcing of data by the premature introduction of theoretical ideas, thus ignoring the emergent nature of grounded theory (Urquhart 2013). Glaser (1992) believed that any attempt to force analysis and subsequent theory from the data would result in regression of analytic thought and activity, and impede the emergence of theory. However, since Strauss and Corbin's (1990) work was first published, there have been a number of revisions to their approach with a shift away from the coding paradigm which has been substantially de-emphasised (Strauss and Corbin 1998; Corbin and Strauss 2015). In common with Glaser's (1992) criticisms of Strauss and Corbin (2015), Charmaz (2006) has similarly re-modelled the original methodology proposing that data can be constructed to form a theory. These adaptations and evolutions of grounded theory pose a dilemma for researchers when considering what version of grounded theory to use. While it is important that methodologies are open to development and improvement, it is important to be wary of the point at which a

methodology has been changed so much that it has become something different altogether. Indeed, as Bryant and Charmaz (2010), proponents of constructivist grounded theory, have recognised how far one can go with altering or revising the basic tenets of grounded theory method before one ceases to be doing grounded theory. While some would suggest that there are multiple versions of grounded theory, each with a family resemblance, Glaser has continued to argue that they differ sufficiently from the original methodology and that they serve a different purpose (Bryant and Charmaz, 2010). Holloway and Todres (2006) propose that researchers have to decide for themselves what grounded theory approach to adopt. For this study the decision was made to use a classic grounded theory approach for undertaking the research.

3.5.1 The Classic Approach

The decision to use a classic grounded theory approach was made as it brought a number of strengths and opportunities to the study. The Glaserian approach offers flexibility and allows an open, free-flowing exploration of the phenomenon (Urquhart 2013). It enables new concepts and ideas to emerge and builds on the analysis of findings by the constant comparison of the data as you proceed. This allows the data to lead the direction of flow and inform the development of a core category and the discovery of a theory. The researcher did not conceptually relate to the more formulaic processes and procedures approach by Strauss and Corbin (1990) and agreed with Glaser (1992) that the procedures detailed limited emergence and could force concepts into a preconceived mould. The researcher did not share the view of Charmaz (2006) that categories and theories are constructed rather than 'emerge' from the data. Glaser's (1978; 1992) arguments are persuasive regarding theoretical sensitivity and the emergence of theory versus forcing.

However, the classic grounded theory approach used for undertaking this research study, posed a number of challenges and some limitations (see section 6.6). The approach is time-consuming as it requires the simultaneous analysis and comparison of data while undertaking data collection. Also, the line-by-line open coding method takes time. Glaser (1999) states that researchers must be able to tolerate ambiguity and confusion as the constant comparison of data are often complex and 'messy'. Emerging concepts can sometimes appear fruitful but do not evolve and lead to 'dead ends'. The researcher has had to be patient and persistent to allow the conceptual sense to emerge from the data to generate theoretical concepts that make sense of what is going on. However, Glaser's (2005) advice is: better to have no theoretical concepts than a forced one. A limitation of grounded

theory is the potential for researcher bias due to professional background and previous knowledge. However, one could argue that having knowledge of an area of clinical practice enabled a richer, more developed understanding of complex phenomena and clinical relevance to be realised. Glaser (1978) argues that the researcher must be theoretically sensitive (see section 4.5.1) so they can differentiate more significant data and have insight into their meanings. Professional experience is one source of awareness that can help make the researcher theoretically sensitive (Holloway and Wheeler 2010).

3.6 Summary

This chapter presented the justification for the methodological research approach undertaken. The study adopted a qualitative design following a classic grounded theory approach to address the research aim to explore the perceptions of stress for people who have experienced a TIA. Relevant literature was critiqued and rationale provided as to why the methodological approach was adopted. The research study is consistent with the defining traditional components of Glaser and Strauss's (1967) original work and subsequent work of Glaser (1978; 1992). Finally, the decision made to use a classic grounded theory or Glaserian approach that stems from the original work of Glaser and Strauss (1967). The classic grounded theory approach adopted brought a number of strengths, including a free-flowing exploration of the phenomenon, enabling concepts to emerge to realise a new theory. The next chapter explores the research methods undertaken to apply the classic grounded theory approach. The chapter includes ethical considerations, sampling approaches, data collection and data analysis methods. It also demonstrates how categories were identified, and how the relationships were built to enable the theory to emerge.

Chapter 4: Research Methods

4.0 Introduction

Building on the research methodology discussed in the previous chapter, the methods are now presented in relation to the qualitative design following a classic grounded theory approach. The methods addressed the study aim and research questions to explore the perceptions of stress for people who have experienced a TIA. The process of gaining ethical approvals from the West of Scotland Research Ethics Service, the University of Stirling's NHS Research Ethics Committee and the local NHS Health Board research and development departments are presented. The sampling approaches to data collection via semi-structured interviews are discussed. Data were analysed using a process of coding, identifying categories and forming a core category by means of constant comparative analysis. The subsequent theoretical processes outlined contributed to the generation of a new substantive theory.

4.1 Links to the COPerSS Research Study

This section explains the origins of the clinical doctorate research study and links with the Contribution of Perceived Stress in Stroke (COPerSS) research study.

The clinical doctorate study aimed to explore the perceptions of stress for people who have experienced a TIA. This is an original piece of research which has led to new knowledge to inform clinical practice in relation to TIA management. The research adopted a qualitative design following a classic grounded theory approach (Glaser and Strauss 1967; Glaser 1978; Glaser 1992) to address the research aim and questions, and enables a deeper meaning and understanding of the phenomenon. The thirteen semi-structured interviews were conducted by the doctorate student, and the resulting data were analysed independently of the COPerSS study. The classic grounded theory approach comprised of a number of methodological strengths, and enabled the emergence of a new substantive theory.

This clinical doctorate study originated from the COPerSS study. The doctorate student was associated with the COPerSS study through his clinical role as a Stroke Nurse Consultant. Firstly, he

was a member of the advisory group for the COPerSS study. Secondly, he acted as principal investigator responsible for the leadership and conduct of data collection for the study at two TIA outpatient clinic sites at the Health Board where he was employed (these sites were excluded from the clinical doctorate study). Finally he co-authored the systematic review and meta-analysis investigating the association between perceived stress and stroke (Booth et al. 2015).

A memorandum of agreement clarified the links between the clinical doctorate study and the COPerSS study (Appendix 1). The memorandum stated that the clinical doctorate study was part of the researcher's Doctor of Nursing programme at the University of Stirling. The links included a shared ethical approval by the West of Scotland Research Ethics Service following a substantive amendment notifying them of the researcher's involvement as part of an educational course (see section 4.2). This involved amending the participant information sheet to include the researcher's involvement (Appendix 2) and sharing the consent form (Appendix 3) between the two studies. Another link was the sharing of raw data (interview transcripts) from ten of the thirteen interviews conducted for the clinical doctorate study with the COPerSS study. As part of the mixed-methods case controlled design the COPerSS research team planned to undertake qualitative interviews with a sample of forty participants who had attended the outpatient clinics and had a confirmed diagnosis of TIA. However, as a result of a number of issues the COPerSS research team ended up only conducting a further six interviews (twenty-four less than planned). These six interviews along with the ten interviews from the clinical doctorate study were collectively analysed independently giving a total of sixteen interviews in the COPerSS study. As both studies were autonomous and conducted independently of each other, the studies adopted different methods of qualitative analysis.

The COPerSS study used a mixed-methods case controlled design combining both quantitative and qualitative analysis. They chose this form of design to ensure the analysis provided both statistical evidence and more in-depth evidence of both the extent and nature of self-reported stress in people with both stroke and TIA. The research was funded by the Queens Nursing Institute Scotland and was completed from May 2012 to March 2014. The mixed-methods study was undertaken in two main stages:

Stage 1: A cross-sectional anonymous survey of perceived stress was completed by 1405 attendees at ten TIA outpatient clinic sites in six different Health Boards across NHS Scotland. The patients'

diagnoses at the outpatient clinic were recorded; those who received a TIA diagnosis formed the main study group and those who received a non-TIA diagnosis formed a comparison group. Age and sex-matched case controls were also recruited from primary care based treatment room attendees. Sixteen semi-structured interviews were conducted with a sub-sample of clinic attendees who had been given a diagnosis of TIA and analysed using a constructivist grounded theory approach (Charmaz 2006). A constructivist grounded theory differs from a classic grounded theory, as it assumes that neither data nor theories are discovered, but are 'constructed' by the researcher as a result of his or her interactions with the participants. The main categories which form the core category, and the theoretical codes which build the theory, are co-constructed by the researcher and participants, and coloured by the researcher's perspectives, values, privileges, positions, interactions, and geographical locations (Charmaz 2006). Whereas, in a classic grounded theory approach the categories and theory emerge through the analysis and constant comparison of the data as opposed to being 'constructed'.

Stage 2: A systematic review and meta-analysis of 14 studies, 10 prospective cohort and 4 case-control design, investigated the association between perceived stress and stroke. The outcome was to clarify differential risks associated with types of stroke and sub-components of perceived stress.

The combined mixed-methods study formed the final research report which is yet unpublished (Booth et al. 2014). The researcher was a co-author of the report and systematic review of the association between perceived stress and stroke (Booth et al. 2015), both were produced during the clinical doctorate study. The researcher achieved putting aside the findings to minimise influencing the research process by using the strategies of theoretical sensitivity (see section 4.5.1) and reflexivity (see section 4.8) and by keeping immersed in the clinical doctorate study data. Theoretical sensitivity occurred by being open minded and sensitive to the discovery and exploration of concepts as they emerged from the data, asking further questions, and seeking clarity. Reflexivity was a continual process throughout the study, and was supported by routine questioning by and discussion with supervisors. It required critical self-reflection of the research process including the influence of the COPerSS study. The key findings of the COPerSS study suggest that perceived stress was an independent risk factor for stroke. No evidence of risk was found between perceived stress and TIA although this may increase following a diagnosis of TIA, highlighting a major gap in the current literature. The report called for more research to explore the role of perceived stress and TIA.

This clinical doctorate study fully acknowledges the links with the COPerSS study; however, both were autonomous studies conducted independently of each other.

4.2 Ethics

This section presents the procedure for gaining approvals from the West of Scotland Research Ethics Service, the University of Stirling's NHS Research Ethics Committee and local NHS Health Board research and development departments. The ethical considerations in the conduct of the research are now discussed.

4.2.1 Ethical Approvals

Ethical approval is required for research studies to promote the potential benefits and minimise harm to participants, science and society (Health Research Authority 2018). This clinical doctorate study received ethical approval with the COPerSS study (see section 4.1).

The COPerSS study was granted approval by the West of Scotland Research Ethics Service on 27th May 2011 reference: 11/AL/0121 (Appendix 4). A substantive amendment was submitted notifying the West of Scotland Research Ethics Service of the researcher's involvement as part of his Doctor of Nursing for the University of Stirling. This substantive amendment was granted ethical approval on 28th September 2012 (Appendix 5). The amendment included changing the participant information sheet to include the researcher's involvement as part of an educational course (Appendix 2). The same consent form (Appendix 3) was shared between the two research studies.

The study is an education project as part of the researcher's Doctor of Nursing at the University of Stirling. The university's NHS Research Ethics Committee approval for the study was sought and granted on 4th October 2012. The University of Stirling agreed to undertake the role of sponsor for the study (Appendix 6) as outlined in the Research Governance Framework for Health and Community Care (Department of Health 2005). Annual progress reports were submitted to the University of Stirling and the clinical doctorate course leader during the period of study.

The Research Governance Framework for Health and Social Care (Department of Health 2005) requires NHS organisations to ensure relevant checks are carried out before any research involving human participants, their organs, tissue or data commences. The chief investigator of the COPerSS study wrote to the research and development departments of the three NHS Health Boards of the researcher's involvement as part of an educational course. Letters of access were obtained from each of the three sites involved (Appendices 7, 8, 9).

4.2.2 Ethical Considerations

There were a number of ethical considerations in relation to the study; in particular, any anticipated risks to either the participants or the researcher.

The main anticipated risk to interviewing participants about perceived stress in relation to TIA, was the possibility of raising concerns and inducing anxiety. The patient information sheet provided advice to discuss any concerns about perceived stress with the staff in the clinic, their general practitioner or practice nurse. The contact details of the medical charity Chest Heart & Stroke Scotland Advice Line were also provided for seeking further advice if required.

Another risk related to protection of the identity of participants to preserve their anonymity and confidentiality. The participant information sheet advised that information provided would be kept strictly confidential and would be stored securely. All research data, documents and reports (including digital recordings) were managed and stored in compliance with the Data Protection Act (1998) and local policies and procedures (see section 4.4.3).

The main commitment from patients was that of time. The interviews were scheduled to last for approximately 30-45 minutes, with a total time commitment of around one hour. Participants were advised prior to commencing the interview that they could pause at any time if required and restart or stop and reschedule (if agreeable).

The main anticipated risk to the researcher was the lone working nature of the research. Undertaking the interviews involved travelling to the participant's preferred location (see section 4.3.3). The researcher followed the local NHS lone working policy to minimise any associated risks. This involved: making a risk assessment (anticipating risk and response); carrying a charged mobile

phone; conducting interviews within working hours where possible; using navigation systems to find locations; ensuring a fully operational car with a full petrol tank; informing supervisors of the interview date, time and location; and contacting a named individual before and after the interview. These actions aimed to protect the researcher as far as is reasonably practicable from the risks of working alone.

The researcher did not have direct clinical involvement with the participants involved in the study. The NHS Health Board where the researcher was employed was part of the COPerSS study; however, the two TIA outpatient clinic sites at the Health Board were excluded from the clinical doctorate study. There were no other known conflicts of interest or additional risks of personal misconduct. The researcher was fully supervised throughout the study by experienced academics from the University of Stirling; that were also available for advice and support.

Having explored the ethics and ethical considerations the next section goes on to discuss the research methods of collecting participant data.

4.3 Research Sample

The sample comprised of adults (both men and women) with a confirmed diagnosis of TIA from a stroke physician. The sample consisted of service users from three NHS Scotland health boards: Site 1, Site 2 and Site 3. From the three NHS health boards' sites, five TIA outpatient clinics participated. These five TIA outpatient clinic sites had an estimated total of 1,532 patients attending annually (see Table 1).

Table 1: TIA Outpatient Clinic Sites

NHS Scotland Health Board	Sites	Estimated Annual Number of Patients attending TIA Clinic
Site 1	Hospital A	
	Hospital B	332 (between both sites)
Site 2	Hospital C	400
Site 3	Hospital D	300
	Hospital E	500
		Total of 1,532 patients

The focus of the study was on TIA patients' perceptions of stress; therefore family members were not included in the sample. Suggestions of sample sizes for a grounded theory study vary in the literature from 20-30 interviews (Creswell 2013). An initial sample of 20 interviews was proposed. Guest et al. (2006) aimed to provide an evidence-based foundation for sample size in grounded theory. They analysed data from in-depth interviews and systematically documented the degree of data saturation and variability. They proposed that data saturation had for the most part occurred by the time they had analysed twelve interviews, although basic elements for the concepts presented as early as six interviews. After analysis of twelve interviews, new themes were found to emerge infrequently; therefore they suggested that a sample size of twelve is satisfactory when exploring individuals' experiences in a relatively homogenous sample. In this study, a judgement was made following thirteen interviews that theoretical saturation had been reached. This was based on the main categories showing a depth and variation in terms of their development with no new relevant concepts being found. The aim in grounded theory is to continue sampling until theoretical saturation is achieved (Glaser and Strauss 1967). Theoretical saturation refers to the constant comparison of concepts of the data to the point where additional exploration yields no further theoretical elaboration (Urquhart 2013). Glaser and Strauss (1967) considered saturation to occur when no additional data are being found that can develop the properties of the categories. The categories are well developed in terms of properties and dimensions and the relationships between them are well established. The study reached saturation based on the sufficient strength and explanatory power of the emerging theory, increasing repetition and decreasing heterogeneity (see section 4.5.5). The study comprised of a sample size of thirteen participants who had experienced a TIA. The sample size was appropriate to the methodological design of grounded theory and to answer the research questions demonstrated in the depth and quality of the findings.

A detailed breakdown of the sample characteristics of the participants is provided in Chapter 5: Findings (see section 5.2).

4.3.1 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria were used to determine participants' eligibility to participate in the study. They had to be an adult (over the age of 18 years) with a diagnosis of TIA. The participants were required to speak and read English to be able to provide written informed consent. The criteria

were determined by the ethical parameters of the approvals and the financial and time constraints of the study. The inclusion and exclusion criteria are detailed in Table 2.

Table 2: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Adult (18 years or older)	Less than 18 years old
A diagnosis of TIA	A non-TIA diagnosis
English speaking	Non-English speaking

4.3.2 Sampling Strategy

Sampling in grounded theory is part of an iterative process of data collection and analysis (Glaser and Strauss 1967). In this study, the combined purposive and theoretical sampling approach was adopted which resulted in thirteen patients participating in the research.

4.3.2.1 Purposive Sampling

Grounded theory studies are characterised by theoretical sampling, but this requires some data to be collected and analysed, therefore sampling must begin purposively (Sbaraini et al. 2011). Purposive sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources (Patton 2002). Purposive sampling involves sampling in a deliberate way with a purpose in mind; selecting individuals knowledgeable about or experienced with the phenomenon of interest (Creswell and Plano Clark 2011). The focus of the study was on patients' perceptions of stress following a TIA. Purposive samples of patients who had completed the perceived stress questionnaire used in the COPerSS study and who expressed a willingness to help further with the research were included (see section 4.1). The aim was to get a sample with varied characteristics, as the review of the literature had given no indication of factors in relation to age, gender or urban/rural settings in those who had experienced a TIA as potentially related to stress. An initial sample of five participants was arrived at ensuring a mix of genders, age groups, spread from across the participating sites and geographical locations as presented in Table 3.

Table 3: Purposive Sampling

Gender	Male	3
	Female	2
Age Groups	30 – 50	1
	50 – 70	2
	70 – 90	2
TIA Outpatient Clinic	Site 1	1
	Site 2	2
	Site 3	2
Location	Urban	3
	Rural	2

4.3.2.2 Theoretical Sampling

Theoretical sampling followed on from the initial purposive sampling. Theoretical sampling is an iterative process of data collection for generating theory whereby the analyst jointly collects, codes and analyses the data and decides what data to collect next in order to develop the theory as it emerges (Glaser and Strauss 1967). Theoretical sampling can be undertaken by selecting participants and/or modifying the questions asked in data collection to develop the codes and categories (Sbaraini et al. 2011). Theoretical sampling followed the first five participant interviews. A number of related open codes from participants focused around antecedents to the TIA: understanding why the TIA had happened and what had caused it. Therefore sampling focused on the emerging concepts as opposed to selecting certain participants. Theoretical sampling was utilised to explore the concepts in more depth with participants during the next semi-structured interviews. This enabled development of the emerging concepts, which maximised opportunities to approve or disprove the subcategory of 'fear and uncertainty' related to stress. Following ten participants interviews further theoretical sampling was undertaken to explore the consequences after the TIA for the individual emerged with open codes around not coping, being out of control and fear. Again theoretical sampling was utilised during further semi-structured interviews to explore the issues in more depth. This maximised opportunities to develop the codes and categories, uncover variations and identify relationship between categories suggestive of a theoretical whole (Holton and Walsh 2017). Theoretical sampling guided the questions used to collect data so to interrogate the key properties.

This is reflected within the evolving versions of the interview schedule (Appendices 10, 11, 12). The researcher was intentionally looking for comparisons and clarifying relationships of categories, as some of the categories had greater resonance with some participants than others. This enabled the progression of analysis, and provided the ability to explore variation. The sampling approach contributed to fortifying categories and the core category to ensure the emerging theory was developed with explanatory power (Elliott and Lazenbatt 2005). Therefore, theoretical sampling was driven by emerging concepts differing from conventional methods of sampling as it is responsive to the data and not determined in advance based on a preconceived theoretical framework.

Table 4 presents an example of theoretical sampling following the first five participant interviews. A number of related open codes from participants focused around antecedents to the TIA: understanding why the TIA had happened and what had caused it. Theoretical sampling was utilised to explore the concepts in more depth to collect data from participants, which maximised opportunities to approve or disprove the emerging category of 'fear and uncertainty' related to stress.

Table 4: Theoretical Sampling

Participant*	Open Codes	Selective Coding	Theoretical Sampling
2	Searching for a reason why?	Fear and uncertainty	Interview schedule version 2:
3	Lack of understanding over the cause of TIA		As well as asking about the TIA and what happened, more in-depth exploration was undertaken into the causation and any connection with stress; how stress has affected their health; and any ongoing concerns
4	Associated stress causing a TIA		
5	Lack of understanding over the cause of TIA; recognises factors contributing to risk		
6	Unclear cause; cannot associate anything		

* Note there was no number one participant as this was the headings on the digital recorder

Table 5 provides a further example of theoretical sampling following the next participant interviews. The consequences after the TIA for the individual emerged with open codes around not coping, being out of control and fear. Again theoretical sampling was utilised to explore the issues in more depth.

Table 5: Further Theoretical Sampling

Participant	Open Codes	Selective Coding	Theoretical Sampling
7	Sense of not coping: did not deal well with TIA	Not coping	Interview schedule version 3:
8	Loss of control and confidence: no solutions just trying to manage	Out of control Fear	Explored in more depth the positive and negative consequences of TIA for the individual; in particular emerging categories of 'coping' versus 'not coping', 'in-control' versus 'out of control' and 'confidence' versus 'fear'
9	Labels self as a 'worrier'		
10	Worrying over her family		

4.3.3 Recruitment

Patients were recruited who had completed the perceived stress questionnaire used by the COPerSS study and who expressed a willingness to help further (see section 4.1). The questionnaire used by the COPerSS study indicated a diagnosis of TIA or not; only those with a diagnosis of TIA were contacted for this study in line with the inclusion criteria. The researcher accessed information on patients who had expressed a willingness to help further by voluntarily providing their contact details (name, address and telephone number) on the questionnaire. Implied consent to contact them was assumed by them supplying their contact details. A purposive sample (see section 4.3.2.1) was then sent a letter (Appendix 13) about the clinical doctorate study with a participant information sheet included (Appendix 2).

Time was then given to allow the patient to reflect on participation. This also gave the patient, or a significant other, the opportunity to notify the researcher if their circumstances had changed. After about four weeks the researcher contacted the patient by telephone to verbally confirm if they were still willing to participate in an interview. If they agreed the researcher arranged a date, time and location suitable to the patient to undertake the interview. A total of thirteen patients were recruited for interview. A judgement was made following thirteen interviews since the main categories showed a depth and variation in terms of their development and no new relevant concepts were being found that recruitment was stopped as theoretical saturation had been achieved (see section 4.5.5). To achieve the recruitment of thirteen patients, a total of eighteen patients were contacted. Two patients declined as they no longer wished to take part, one patient declined as he was the main carer for his wife who was unwell, one patient's son declined on behalf of his mother as she had memory problems and one patient was excluded as they had subsequently received a non-TIA diagnosis. The location for the interview could be the patient's own home or a suitable alternative location. All requested to be interviewed in their own home except for one who requested a public space. The patients were asked if they had any special requirements or needs, in relation to communication or disabilities. A family member could be present at the interview with the patient's agreement, although the family member was not asked questions directly during the interview. Two out of the thirteen patients had a spouse present for their interview.

4.3.4 Consent

Written informed consent is fundamental to ethically-based research and was obtained prior to the starting the interview with the participant (Creswell 2013). The patient information sheet provided an explanation about the research (Appendix 2). It detailed that the participant was being invited to take part in a study which formed part of a Doctor of Nursing educational course; also that the researcher was an experienced stroke nurse and also a student at the University of Stirling. It described how, during an interview, the participant would be asked questions about their experiences of stress and their medical condition. It explained that the information provided would be analysed as part of the researcher's learning for his Doctor of Nursing education course, and also analysed separately by the COPerSS research project (see section 4.1). It verified that participation was voluntary and they had the right to withdraw at any time, without giving any reason, and without their medical care or legal rights being affected. The researcher confirmed with the patient

whether they had read and understood the information sheet. Both on the initial telephone contact and prior to the start of the interview the participant was given the opportunity to ask any questions and have them answered to their satisfaction. Immediately prior to the interview commencing, written consent was obtained by the researcher using the approved consent form (Appendix 3). The consent form was signed by the participant, and witnessed and signed by the researcher. The consent form confirmed agreement to take part in the study, and for the interview to be recorded.

4.4 Data Collection

Having considered the sampling approaches, recruitment and consent, the next section goes on to discuss data collection via semi-structured interviews with participants.

4.4.1 Semi-structured Interviews

In qualitative research a range of data collection methods can be utilised including: interviews, focus groups, observation and documentation; however one-to-one interviews are the most common approach (Cresswell 2013). Glaser and Strauss (1967) consider interviews to be a core method of data collection in a grounded theory approach.

The semi-structured interview was the preferred method of data collection for this study as it aligned with the methodological approach and was considered a valuable approach to addressing the research questions. The semi-structured interview is a useful method of interpretive enquiry which allows an in-depth exploration of a particular phenomenon (Cresswell 2013). It is a useful way of accessing people's perception, meaning, and definitions of situations and constructions of reality (Robson 2002). The open nature of the questions allows free expression of memories, thoughts and perceptions (Cresswell 2013). It provides a flexible format to capture the participants' own words allowing new ideas to be brought up during the interview as a result of what the participant says. The interview format also allows clarification to be sought and enables more in-depth probing and exploration. However, it can be time consuming, the format and style can vary between participants, and the researcher requires skill and experience (Cresswell 2013). A semi-structured interview schedule was developed for the study, it was designed to be clear, unambiguous and allow the free flow of expression to provide reliable, comparable qualitative data (Holloway and Wheeler 2010;

Appendix 10). The schedule aligned to the research questions and helped to focus on the salient issues and significant emerging issues. The questions were tailored to the interview context and situation, and to the participant being interviewed. However, the researcher also allowed the content of interviews to be led by participants.

An alternative approach to data collection considered was the unstructured interview. Unstructured interviews start with a broad, open question concerning the area of study, with subsequent questions dependent on the participant's responses (Holloway and Wheeler 2010). The interview is non-directive and flexible and although the researcher follows an interview guide, it comprises of themes rather than specific questions. The unstructured interview was deemed to be too broad an approach for addressing the overall aim and research questions of the study.

In line with the grounded theory approach, data collection took place concurrently with data analysis during the thirteen interviews. Analysis from the initial interviews and emerging categories provided the theoretical shape for subsequent interviews. Theoretical sampling (see section 4.3.2.2) enabled selective data to be collected during the interviews. This is reflected within the evolving versions of the interview schedule (Appendices 10, 11, 12).

Prior to commencing the interview, participants were advised that they could suspend or end the interview at any time. To ensure that disruptions and interruptions would be minimised it was requested that telephones and televisions were switch off where possible. The interviews were digitally recorded with the participant's permission. Recording equipment was checked to ensure it was in working order and replacement batteries were available. On switching the recorder on, it was placed discreetly in front of the participant in order to not distract the participant or for it to become a point of focus.

Interviews were performed at the pace of the individual, allowing for pauses where necessary. Each interview ended by asking if there was anything else they would like to say. This was to ensure that the participants had nothing else to add before switching the recorder off. Recordings were checked immediately following the interview for quality. Participant interviews were transcribed verbatim removing any identifying information and using participant identification numbers to main anonymity and confidentiality. The transcription of the first five interviews was undertaken by the researcher. This was done to attain intimacy with the data and ensure an in-depth exploration. The subsequent eight transcriptions were undertaken by an approved transcriber familiar with research

interview transcribing and bound by confidentiality. The interview recordings were listened to by the researcher on multiple occasions to ensure accuracy of transcription and allow immersion with the data to support the analysis. Academic supervisors reviewed the initial interview transcripts and provided constructive feedback on the quality of exploration of concepts.

The semi-structured interviews were all undertaken by the researcher. As an experienced nurse, he was familiar with interviewing patients in the clinical setting. He had developed transferrable skills including communication, listening, and dealing with sensitive issues. However, he had limited experience of conducting research interviews where the skill set required is different. Therefore, prior to commencing the study the researcher undertook a 'mock' interview with an experienced researcher to practise skills such as summarising, paraphrasing, silence, the use of gestures and non-verbal prompts to check understanding. A key skill was learning when and how to explore a point further, being sensitive to the participant's anxieties and vulnerabilities. The researcher's academic supervisors also provided feedback on the interview style, and advice such as the need to avoid paraphrasing using clinical language.

4.4.2 Field Notes

Field notes were documented immediately after the interview concluded, on leaving the participant. Field notes in grounded theory are simply in the moment reminders of incidents that may indicate potential concepts (Holton and Walsh 2017). The recorded notes were descriptive and reflective in nature and aimed to capture observations and thoughts on a number of things including: the participant, setting and location; interactions and non-verbal communications; and finally any emerging issues. Potential theoretical ideas that were stimulated by the interview discussion were also noted. The notes were not overly detailed or extensive but contributed nevertheless to the research process. The notes were reviewed as part of the constant comparative analysis to identify suggested concepts that could contribute to the emerging codes and categories. Identified concepts were further elaborated through theoretical sampling (see section 4.3.2.2) and theoretical memoing (see section 4.5.3). Table 6 presents examples of part of the researcher field notes.

Table 6: Field Notes

Participant 6
The participant found the experience of the TIA 'frightening'. She was tearful on a few occasions during the interview over the cause of the TIA and fearful of having another TIA or full-blown stroke. Since the event she has experienced some significant family stresses including: her daughter having a nervous breakdown, and her brother being diagnosed with cancer. Despite this she takes a very pragmatic and practical approach and remains in control by forward planning the various aspects of her life. She talked about some stress reduction strategies including: music, reading, complementary therapies, and going on cruise holidays.
Participant 13
The participant had been under extreme stress before the TIA event. This was work related due to a breakdown of relations with his business partner leading to legal action; and the concurrent bidding for and securing of a large business contract. He expressed a strong personal self-belief in helping him get better. He talked about the importance of being in control and re-evaluating what's important to him in life.

4.4.3 Data Management

All research data, documents and reports (including digital recordings) were managed and stored in compliance with the Data Protection Act (1998), NHS Confidentiality Code of Practice (Department of Health 2003), and employer and university policies and procedures. The names and identity of participants were not revealed as a result of the data collection, analysis and reporting of the study results, in order to preserve their anonymity and confidentiality. Each patient was given an identifying code which was used for electronic storage and data processing. An encrypted password-protected laptop computer was used to store patients' names with identifying codes and digital recordings. All hard copies of data including: patient information, consent forms, interview transcriptions, field notes and memos were kept in a locked filing cabinet. Direct quotes from the interviews were used in the research report and publication paper; however the participants are not

identifiable from the quotes and the identifying code was used. Research documents were stored in password-protected files on the University of Stirling hard drive. Following study completion, as per the University of Stirling policy, data will be securely stored for a period of 10 years and then destroyed.

4.4.4 Computer Software Packages

Research software packages were not used in the study. This was a deliberate decision after reviewing software packages and speaking to academic supervisors. Computer packages primarily support the storage, organisation and management of data. However, Holloway and Galvin (2015) caution that researchers can become so concerned with the additional burden of learning and using the software programme that the research can become secondary in the process. Researchers can also be unclear or confused about the role of software programmes in qualitative analysis. Dey (1993) suggests that software programmes can help make it easier to analyse data in different ways, however, it can be mistakenly described as actually performing qualitative analysis (Kelly et al. 2002). The researcher wanted to remain close to the data and the associated complexities in order to be creative and free to conceptualise. Charmaz (2006) expresses concern that software programmes can have a distancing effect, suppressing creativity, when researchers need sensitivity and to be more involved with the data.

Having presented the data collection approach via semi-structured interviews with participants, the next section considers the data analysis methods used following the classic grounded theory approach.

4.5 Data Analysis

A classic grounded theory methodology involves analysing the data as soon as it is available. This section presents how the data were analysed using a process of coding, identifying categories and forming a core category by means of a continuous process of constant comparative analysis. It discusses how the theoretical conceptualisation contributed to the generation of a new substantive theory.

Data were analysed using a systematic approach proceeding through three stages of coding: open, selective and theoretical (Glaser and Strauss 1967; Glaser 1978; Glaser 1992). The process of coding identifies codes, then categories, connecting and grouping them by means of constant comparative analysis. An important feature is building relationships between constructs to develop the theory. A standardised formulation was provided by Strauss and Corbin (1998), however Glaser (1992) opposed their more structured approach and prefers a more purist grounded line. He believes a classic grounded theory approach allows codes, and the form they take, to emerge from the data rather than being forced into any particular pre-determined format. Glaser's (1978, 1992) work was particularly influential in the analysis of the data, especially his recommendation that one should concentrate upon emergence rather than forcing.

4.5.1 Theoretical Sensitivity

(Please note: as this section refers directly to the researcher it is written in the first person).

Theoretical sensitivity is a key concept in grounded theory analysis. The essence of theoretical sensitivity is the ability to generate concepts from data and to relate them to models of theory in general, and theory development (Glaser and Holton, 2004). Generating a theory from data means that most concepts not only come from the data, but are systematically worked out in relation to the data during the course of the research (Glaser and Holton, 2004). In this study I developed theoretical sensitivity through listening, reading, being creative and innovative (Glaser and Strauss 1967; Glaser 1978; Glaser 1992). The first step was to enter the research setting with as few predetermined ideas as possible (Glaser 1978). This was achieved firstly by undertaking a non-committal review to explore current understanding of the relationship between perceived stress and TIA. This established a gap in the evidence base to inform and shape the research aim and questions, and develop the research proposal. A non-committal review was carried out on the understanding that I aimed to prevent it influencing the research process by keeping immersed in the data and allowing the emerging theory to determine the relevance of the literature (Urquhart 2013). Secondly, by being open minded and sensitive to the exploration and discovery of concepts as they emerged from the data. At the first open coding stage everything is treated as being of significance. Therefore, I put aside any preconceptions and was able to respond to the subtle nuances and clues to meanings by being sensitive to the words and phrases used by participants as advocated by Glaser (1978). This was followed by selective coding when coding becomes limited to only categories that relate to the research problem (Glaser 1978). Selective coding involved scaling up the open codes

into those categories that were reflective of the perceptions of stress for people who had experienced a TIA. The grouping was related to the research phenomena and data enabling patterns to emerge. It was an evolving process and involved going back and forward through the categories and the content in order to make sense of the data and give consideration to plausible relationships between the concepts under study through the constant comparative process. Theoretical sensitivity occurred as I interacted with the data, thinking about emerging ideas, asking further questions, and seeking clarity. It also created opportunities to generate codes that may fit and work, and recognise more significant data from less important data. Being able to recognise more significant data from less important data was achieved by being immersed in the data and the engagement with participants where they had emphasise significant aspects not only verbally but emotionally through tone of voice and body language. I became more intuitive, perceptive and responsive to the data, developing sensitivity as the analysis progressed. An example was the emergence of the core category: the equilibrium for health and well-being after TIA for the individual. By refining and integrating categories I identified the characteristics of the core category that were occurring frequently and naturally, and which linked categories demonstrating a pattern. This led to me developing the core category which was a central phenomenon in the research. I became immersed in the data by revisiting and reflecting upon interview transcripts, field notes and theoretical memos, and re-listening to the interview tapes. Glaser and Strauss (1967) and Glaser (1978, 1992) both emphasise the benefits to be gained from continually listening to and reading the data in this way to help identify how participants constructed their meanings and understandings. The process of constant comparisons stimulated sensitivity leading me to establish relationships between categories which were built and expanded upon to address the research questions. I could see the kind of categories that aligned to the data theoretically, so I knew how to code the data, to ensure the emergent theory fitted and worked (Glaser and Holton, 2004). Through the process of theoretical coding I was able to connect, shape and build the theory. The theoretical codes emerge from the data but I was also able to generate codes from the creative analysis of the data by being theoretically sensitive. However, the codes were not preconceived and were grounded in the data. The codes formed the building blocks which I created the cohesion to generate the theory. My identification and formulation of the theoretical codes was essential to the development of an integrated substantive theory with conceptual and explanatory power. Nurturing my theoretical sensitivity ultimately contributed to the generation of the new substantive theory.

4.5.2 Constant Comparative Analysis

Constant comparative analysis is an essential feature of grounded theory research. It is the continuous cycle of collection, analysis and comparison of data sets in order to identify concepts and construct theories (Elliott and Lazenbatt 2005). The constant comparative method involves the continual comparing of incident with incident in the data, going back and forth to identify and recognise emerging similarities and differences. The comparative process raised the conceptual level and gave a continually transcending perspective, a constantly larger, and less bounded picture (Glaser 1999).

Constant comparative analysis was continuous throughout the coding process; it commenced with open coding to identify and compare codes (see section 4.5.4.1); followed by selective coding to explore the relationships between categories, connecting and grouping them to inform the core category of the research study (see sections 4.5.4.2 and 4.5.4.3). Constant comparison involved comparing instances of data labelled as a particular category with other instances of data in the same category. Every 'slice of data' was compared with all existing concepts and constructs to evaluate its significance, to see if it enriched an existing category, formed a new one or pointed to a new relationship (Urquhart 2013). Data collection and constant comparative analysis were conducted simultaneously and informed each other in the generation and building the categories to become conceptually interrelated. The writing of field notes (see section 4.4.2) and theoretical memos (see section 4.5.3) also helped develop the relationships between emergent categories and what might be important and novel findings. Glaser (1992) places full conceptualisation of data and developing conceptual relationships at the heart of developing explanatory power.

4.5.3 Theoretical Memos

Glaser (1978) suggests that the writing of theoretical memos is a core activity throughout the grounded theory process and describes it as:

'The theorising write-up of ideas about codes and their relationships as they strike the analyst while coding'   (Glaser 1978, p 83).

Glaser (1978) encourages the use of theoretical memo writing to ensure the retention and development of ideas that otherwise might be lost. The writing of theoretical memos helps theorise about codes and categories, the relationships and connections between categories and what might be an important and novel finding. Glaser (1978) describes the usefulness of memos as a way of 'conceptual sorting'. In conjunction with the constant comparative process, the memos can help build the relationships between concepts and allow specific themes to emerge and a theory to evolve (Urquhart, 2013). They provide a record of the analytical building blocks from which the new theory is developed (Elliott and Lazenbatt 2005).

Memo writing is a reflective activity and memos are written records of analysis which the researcher compiled. Memos were written throughout the data collection and analytical process. It captured the researcher's thoughts and developed concepts identified in field notes. It also helped stimulate the imagination and conceptualise theoretical ideas and constructs. The memos were particularly useful in making links between codes and categories whist connecting both to the research questions. Creating and referring to theoretical memos through the data collection and analysis process provided a means to look at data afresh to generate wider and deeper lines of inquiry and meaning. Theoretical concepts and questions also emerged which informed theoretical sampling for exploration in subsequent interviews. While, initially, memos were more frequent but more simple, they became increasingly theoretical and in-depth as the study progressed. Table 7 presents examples of theoretical memos from the study which were written by the researcher in the first person.

Table 7: Theoretical Memos

What is stress? How is perceived stress defined?
These two questions are frequently coming to my mind during the collecting and analysing of the data. After immersing myself in the data and on careful reflection I decided that the answer to 'What is stress?' is self-determined by the participants; and 'How is perceived stress defined?' is by what the participants say it is. I believe this is in line with the grounded theory ethos and allows participants the freedom to apply their own interpretation and meaning. However, this has presented challenges when interpreting data as participants used a range of interchangeable words and phrases when talking about stress, examples include distress, worry, pressure, and feeling anxious. They also referred to related life circumstances including: work, unemployment,

bereavement, family illness, relationships and conflicts, being a carer or looking after children, mental health issues and finances. Participants spoke about a wide range of things which stress provoked from physiological responses, such as nose bleeds; psychological responses, such as anger; and finally social responses, such as social isolation.

31/07/2013

'Figurative Journey'

As I collected data and started the analysis the 'journey' experienced by participants is emerging strongly, as has the role perceived stress has played at each stage. I have decided to adopt the term 'figurative journey' as a metaphorical way to express this; as the term is not intended to be understood literally. The figurative journey portrays participants' experiences before, during and after the TIA and the role of perceived stress. This has resulted in some main patterns emerging, conceptualised by the constant comparison of participants' interviews.

The research focus began with an exploration of perceived stress as an antecedent to a TIA, or in other words, that stress was present in the run-up to the TIA event. However, at the early stages of analysis it became clear that participants spoke about perceived stress throughout their TIA journey. Participants did not place a particular emphasis on a certain point of the journey, such as the lead up to the TIA, but spoke about perceived stress at different stages of their experience. They discussed perceived stress and TIA in a broad range of ways.

The main stages of the participant's figurative journey emerged through the analysis. These stages were expressed from participants' own phrases to further ground the meaning and understanding of the data. They are:

Antecedent	*Before the TIA*	*'There was a lot of pressure going on'*
Incident	*The occurrence of the TIA*	*'Is there something happening or not'*
	The immediate aftermath	*'The instant that happens there's doubt'*
Consequential	*Managing after TIA*	*'I've got to just stop, slow down and get my breath back'*

	Ongoing challenges	*'Worrying more about my lifestyle and everything'*
		17/07/2017

4.5.4 Coding

A classic grounded theory methodology involves coding the data collected. Coding has been described as the process of attaching concepts to the data for the purposes of analysing that data (Urquhart 2013). Data were analysed using a systematic approach proceeding through three stages of coding: open, selective and theoretical. The process of coding identified open codes, then categories; connecting and grouping them by means of constant comparative analysis. Subsequent theoretical sampling enabled selective data to be collected during the participant interviews through an iterative process to develop the categories and inform the core category. Finally theoretical coding helped construct and build the substantive theory of the study.

4.5.4.1 Open Coding

The grounded theory method started with open coding which began immediately after the first interview. Open coding was first explicitly mentioned in Glaser's (1978) book when he described it as 'coding the data every way possible', i.e. opening the data to all potentials and possibilities contained within them. Open coding is both an iterative and reflective process, and involves attaching initial conceptual labels to the data.

Open coding involved the researcher listening to the digital recordings, and reading and re-reading interview transcripts and field notes (see section 4.4.2); then coding each line of the transcript. Line-by-line coding allowed the researcher real intimacy with the data and enabled detailed consideration of the text. Glaser (1978) states that it also helps free the researcher of any preconceptions. The process involved breaking data down into component parts, closely considering those parts and comparing and contrasting the parts. Everything was treated as significant and the use of a constant comparative process helped evaluate that significance.

The coding is deliberately 'open' to all potential and possibilities contained with it, so as not to close down any future directions. It involved identifying both descriptive and analytical codes. There was a natural focus from descriptive to analytical codes as the aim is always to get a code that analyses data rather than simply describes it. Glaser (1992) describes it as seeking codes in the data which have underlying meaning, uniformity and a pattern within a set of descriptive incidents. The coding process fleshes out what is important and points out directions in the analysis; directions potentially that may not have been thought of.

The following examples of open coding are taken from the semi-structured interviews. Table 8 is an extract from Participant 8's interview providing an example of the line-by-line open coding. The line-by-line coding identifies meaningful words, phrases and sentences.

Table 8: Open Coding - line by line

Researcher	Participant 8	Open Coding
	'Yeah, oh yeah, I think one of the things after the TIA thing it wasn't it, was the uncertainty of knowing had it happened, is it having an effect on me. It was that worry about that, that was more of a problem than the concept of it actually having happened. It gets back to worrying again.'	Uncertainty following TIA: had it happened, what effect it was having. It was the associated worry as opposed to the TIA actually happening ANALYSIS: Uncertainty and unanswered questions; not coping
What do you think the consequences of the TIA were?		
	'Well technically I think it had no effect on me.'	
Right		
	'Really, I was quite convinced that really the trouble is the instant that happens there's a doubt. And I had to keep trying to sort in my mind's eye,	The trouble after the TIA is there is doubt Has something happened or

	is there something happening or not, you know. And then that's just like a bit, it's a bit like worrying, it's like stress that you've got to sort of say am I really stressed or am I just going over the top and imagining cause that's the other side, you can overdo it.'	not, resulting in worry and stress; and perhaps imagining the worst ANALYSIS: Uncertainty, doubt and a lack of control leading to stress and imagining the worst
Ahuh		
	'And so it took a wee while for me to actually sort of say have I been affected am I stuttering more out of this and slowly I just had to say no I'm just getting a bit bloody old. Some of the things that are going on I'm doing too much I'm getting anxious that's the word I was trying to get. In some ways I feel as I'm getting older the anxiety of the worrying is bigger than the worry in itself.'	Questions has he been affected as he is stuttering more or is it age related Dichotomy: are his symptoms related to the fact he has had a TIA or is it just ageing? Anxiety or stress about the worry as he gets older is more problematic than the worry itself
Right		
	'This is something I'm just, you know. Just sort of year or two and all that cause I'm getting older and all that. I'm trying to just keep myself fit and all that kind of thing and I realise at times that I can't quite do as much as I can and I sort of say well is that because of my heart or is it because I'm just getting older or don't know but in the background it's the anxious bit about cause really at the end of	Recognises he is getting older Tries to keep fit and active but realising he can't do as much. Either because of his heart condition or age. Not sure what condition his heart is in Added worry about condition of his heart or is it ageing? ANALYSIS: Recognition of the

	the day I don't know what states my hearts in.'	importance of fitness. Coming to terms with ageing
Ahuh		
	'And feel. It's just I know myself. My stomach tightens and the breather gets harder because the stomach muscles are all tightened and it's a case of what the hell's going on I get okay I get on okay with the doctor he's here now and then normally just once a year in the sense for a check-up but like after the TIA we just sit and do a routine check and see if everything's okay.'	Talks about feeling anxious and getting 'tight' in the stomach resulting in his breathing getting harder ANALYSIS: Physiological manifestations of stress ANALYSIS: After the TIA gets medically examined, a routine check to make sure everything is ok – regaining control
Did the TIA caused some of that anxiety?		
	'No, no I don't think so. I think it's just I think it's just the fact I am past the retiring and obviously the mind is saying you're going to have to stop work some time you know. There's these things going on and I just worry a bit about, just worrying about the future and just I think more than that just I wonder where we're going to be in a year's time type thing.'	When asked does not associate anxiety with TIA Relates his anxiety to life changes such as giving up work and retiring, and the future ANALYSIS: TIA in context of life changes; anxiety not related to TIA
Ahuh		
	'Technically I know I don't have to worry right and the fact is that I kind of feel pushed in a corner. I've got no reason to worry, there is enough money to survive on we've got enough. But the point is I do. And	Talks about not having to worry but being 'pushed in a corner'. However, feels he is unable to stop the worry and stress; just have to live with it and keep it under control

	that's the thing you can't stop the old worry thing and stress. You can't actually stop it and switch off. You've got to live with it and just keep it under control.'	ANALYSIS: Sense of powerlessness and lack of control to switch off stress; no solutions, just trying to manage it

Table 9 is from Participant 9's interview data and illustrates how segments of text were then given an open code based on the conceptual meaning. The names of the codes were derived closely from the terminology used by participants to maintain the context of their meaning.

Table 9: Open Code

Participant 9 Quotations	Description	Analytical Meaning	Open Code
p6 *'I'm very into self-help I think, yes. I just get myself sorted out and you know.*	Uses self-help as a way of getting organised	Has confidence in self-help as a way of managing, coping and being in control	Self-management
p6 *'I have self-help books that I read and enjoy. And, no I can get myself sorted out, pretty quick really.'*	Uses knowledge from self-help books, able to help get herself quickly organised	Knowledge enables her to prioritise, plan and manage responsibilities Self-awareness and pacing	
p6 *'To see what's important and what isn't.'*	Uses self-help as a way of being aware of what's important		
p6 *'I'll just do one thing at a time until I get through it and if I don't do it this week I'll do it next week.'*	Self-help enables her to do things until she gets through them without concern		

4.5.4.2 Selective Coding

The research progressed by developing open codes using selective coding (Elliott and Lazenbatt 2005). Glaser (1978) describes selective coding as the stage when coding becomes limited to only categories that relate to the research problem. This is in contrast to the first stage of open coding when everything is treated as being of significance.

Selective coding involved scaling up the open codes into those categories that were reflective of the perceptions of stress for people who had experienced a TIA. In practice, because of the 'bottom-up' nature of coding in grounded theory there was quite a lot of grouping to be done at this stage. The grouping was related to the research phenomena and data as patterns emerged. It was an evolving process and involved going back and forward through the categories and the content in order to make sense of the data and give consideration to plausible relationships between the concepts under study through a constant comparative process. An example is the emergence of the category destabilisers. This evolved from related groupings such as: uncertainty about what happened; uncertainty about condition; risk factors for condition; fear of a stroke; and overprotection of a loved one. These groupings created the emerging patterns of 'fear and uncertainty' related to stress and formed subcategories. These subcategories went onto form the category destabilisers. Some open codes became larger categories and other open codes become properties or dimensions of these larger categories (Urquhart 2013). Categories were a summary of open codes merged together under one heading. Often codes could sit under more than one category. Categories and their headings were deemed to be provisional to enable them to be changed, developed and allow new ideas to be incorporated.

Subsequent theoretical sampling (see section 4.3.2.2) enabled selective data to be collected during the participant interviews through an iterative process. Following the initial participant interviews a number of related open codes from participants focused around antecedents to the TIA: understanding why the TIA had happened and what had caused it. Theoretical sampling was utilised to explore the concepts in more depth with participants during the next semi-structured interviews. This enabled development of the emerging concepts, which maximised opportunities to approve or disprove the subcategory of 'fear and uncertainty' related to stress. In subsequent participant interviews further theoretical sampling was undertaken to explore the consequences after the TIA for the individual that emerged around not coping, being out of control and fear. This process enabled the categories to be reviewed as further new data was collected, so as to ensure that data

was not being forced into the categories but rather that the categories represented the data. The theoretical sampling process enabled the progression of analysis, and provided the ability to explore variation and contribute to enhancing the explanatory power (Elliott and Lazenbatt 2005).

Table 10 provides an example of selective coding to form subcategories around the uncertainty about the condition and the fear of it happening again leading the category of destabilisers.

Table 10: Selective Coding - the development of subcategories

Participant	Analytical Meanings	Open Codes	Subcategory	Category
2	Uncertainty and lack of understanding about what had happened	Uncertainty about condition	Uncertainty	Destabilisers
	Fear or protection by wife who chose not to share information about what was happening	Fear and over-protection of a loved one	Fear	
3	Impact of statement as she poignantly remembers the nurse expressing the future risk of a stroke	Fear and risk of a stroke	Fear	
4	Contemplation the risk of another stroke. Anxious a headache is another stroke occurring. Second TIA event reinforces fear	Fear of a stroke; resulting in stress after TIA	Fear	
5	Understands the implication of a TIA and that it may be a warning to a stroke. Recognises relevance of his risk factors such as diabetes and high blood pressure	Knows about the risk of stroke and contributing factors	Fear	

6	Found the experience frightening	Living in fear of another TIA/stroke	Fear	
	Fearful of the thought of it happening again			
	Experienced a series of 'stressful' events since; worried they would result in a stroke			
	Uncertainly that they were unable to determine exactly what happened	Uncertainty about what happened	Uncertainty	
	Links uncertainly to the fear of another TIA/stroke			

Through the process of selective coding an example of a category that emerged was destabilisers. An explanation of the category destabilisers is presented in Table 11; this category subsequently formed part of the core category (see section 4.5.4.3).

Table 11: Category

Destabilisers of Stress
Destabilisers were one category that formulated the core category of the study. The destabiliser subcategories that emerged through analyses of the data included fear and uncertainty, being out of control, and not coping. Destabilisers were factors that could increase stress and hamper the sense of balance essential for physical and mental health and well-being. Destabilisers influenced the state of equilibrium by creating imbalance; operating to countermand another category 'stabilisers'. There was also a close interplay between destabilisers and the category 'influencers' which could reduce the effects of the destabilising features.

4.5.4.3 Core Category

The core category emerged naturally towards the end of the selective coding process. The selective coding process (see section 4.5.4.2) organised the open codes into sub-categories and then clustered sub-categories into categories supporting the emergence of the study's core category: the equilibrium of health and well-being after TIA for the individual. Theoretical sampling (see section 4.3.2.2), constant comparative analysis (see section 4.5.2) and theoretical memoing (see section 4.5.3) led to the refining and integrating of categories and development of the core category. Glaser (1978) identifies the characteristics for the core category as a central phenomenon in the research occurring frequently and naturally, which is linked to all other categories establishing and demonstrating a pattern. The main categories that emerged which formulated the core category are illustrated in Table 12.

Table 12: Core Category

Core Category		
The equilibrium of health and well-being after TIA for the individual		
Category	**Category**	**Category**
Stabilisers of stress	Destabilisers of stress	Influencers of stress
Subcategories	**Subcategories**	**Subcategories**
Confidence (certainty)	Fear (uncertainty)	Knowledge and self-belief
In control	Out of control	Exercise and relaxation
Coping	Not coping	Connections

4.5.4.4 Theoretical Coding

The final coding stage when using grounded theory methodology is theoretical coding. Once the core category emerged, theoretical coding was undertaken to connect, shape and build the theory.

The identification and formulation of theoretical codes were essential to generating a theory. Glaser (1978) states that theoretical codes give: an integrative scope, the broad picture and a new perspective. The theoretical codes emerge from the data but can also be generated, coming from the creative analysis of the data by a theory-sensitive researcher (Urquhart 2013; see section 4.5.1). However, codes cannot be preconceived and must be grounded in the data. The theoretical codes generated from the study were perceived stress, self-management and achievement of equilibrium for health and well-being. The codes conceptualise how the core category and categories related to each other and assert a plausible relationship between concepts. The theoretical codes were constantly modified as changes occurred to increase formal abstraction and give the emerging theory its overall shape. The codes were the building blocks which created the cohesion to generate the emerging theory. The literature was reviewed as the emerging theory was developed, to consider its relevance and credibility (see section 4.7). The emerging theory was compared and contrasted to the existing literature and theories to help with the densification of the theory and achieve a reasonable level of abstraction (see Chapter 6: Discussion). The identification and formulation of theoretical codes were essential to the development of an integrated substantive theory with conceptual and explanatory power.

An example of one of the main theoretical codes in the study was the achievement of equilibrium for health and well-being. A theoretical explanation of the code is provided in Table 13. This code formulated the shape of the theory and contributed to the generation of the conceptual power of the substantive theory.

Table 13: Theoretical Code

The achievement of equilibrium for health and well-being
The theoretical code, the achievement of equilibrium for health and well-being, was developed from the core category. A balance was required to achieve an optimum state of equilibrium essential for physical and mental health and well-being after TIA. Stress was a key influencing force and its presence or absence contributed to a situation of imbalance or balance. The impact or amount of stress determined the level of imbalance or balance e.g. the greater the perception of the impact of stress, the greater the imbalance; or the lesser the perception of the impact of stress, the greater the balance. Influencers aided the restoration and the achievement of equilibrium. Influencers played a role in the type and amount of stress perceived by the individual. They impacted on stress and could aid (stabilise) or hamper (destabilise) and were closely

associated with outcomes. The influencer concepts therefore have an effect on the individual's ability to achievement of equilibrium for health and well-being.

4.5.5 Theoretical Saturation

Data analysis has a progressive direction, as the aim of grounded theory is to achieve theoretical saturation. Theoretical saturation refers to the constant comparison of concepts of the data to the point where additional exploration yields no further theoretical elaboration (Urquhart 2013). Saturation is a concept often misunderstood but occurs when no new concepts can be found which are important to the development of the emergent theory (Smith and Biley 1997). However, it can prove difficult to identify when saturation has been achieved. Glaser and Strauss (1967) considered saturation to occur when no additional data are being found that can develop the properties of the categories. The categories are well developed in terms of properties and dimensions and the relationships between them are well established.

It has been proposed that theoretical saturation can occur within twelve interviews when exploring individuals' experiences in a relatively homogenous sample (Guest et al. 2006). Following thirteen participant interviews being conducted, compared and analysed, a judgement was made that the main categories showed a depth and variation in terms of their development. No new relevant concepts were being found that were important to the developing theory. It was deemed the study had reached saturation based on increasing repetition of the main concepts and decreasing heterogeneity. The data analysis was demonstrating sufficient strength and explanatory power of the new emerging theory. Taking into account all of these factors data collection ended at this point.

4.5.6 Substantive Theory

The grounded theory methods used enabled the building of a theory. Generating a grounded theory was achieved through the theoretical coding and categorising of data, the constant comparative analysis, and the asking of theoretically conceptual orientated questions. To shape the theory the technique of theoretical sampling (see section 4.3.2.2) enabled the discovery of categories, properties, and interrelationships suggestive of a theoretical whole (Holton and Walsh 2017). Theoretical coding (see section 4.5.4.4) conceptualised how the core category and theoretical

concepts related to each other, thereby giving the emergent theory its overall shape. Theoretical saturation (see section 4.5.5) demonstrated that the developing categories had been saturated, thus the emerging theory generated its own selectivity (Glaser and Strauss 1967). The substantive theory must be grounded in the data, emerge directly from the field of study, and be readily understandable and applicable in terms of relevance (Glaser and Strauss 1967). These criteria are met by the study increasing its conceptual and explanatory power. The theory is substantive in the sense that it pertains only to the phenomena under study and makes no claims to generalise beyond those particular phenomena (Urquhart 2013).

The research study led to the following new substantive grounded theory (see Chapter 5: Findings). The theory is reported as a proposition or in other words a statement that expresses an opinion as follows:

If stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being.

The substantive theory was developed within a specific setting and context, and is relevant to similar settings or groups. It is important to clinical practice because it helps make sense of the experience of stress for people who have experienced a TIA. The theory generated is directly related to the context of the study and demonstrates explanatory power, making it persuasive and helpful to create change and the advancement of clinical practice. It contributed to the field of knowledge making a unique contribution to TIA management.

This section presented how the data were analysed following a classic grounded theory methodology. The next sections discuss research quality, the use of literature and reflexivity in qualitative research.

4.6 Research Quality

The quality of the research study was considered in relation to the accepted standards particularly within grounded theory research as a distinct paradigm.

A recognised method of assessing the quality of research involves applying criteria which are the accepted standards for 'best practice research'. The criteria referred to in grounded theory are that the research must have fit, work and relevance (Glaser and Strauss 1967; pp. 237-250). 'Fit' means that connections to the data are clearly established and those connections are confirmed by continuous comparisons. This was achieved in the research by the constant comparative analysis continuous throughout the analysis process; it commenced with field notes (see section 4.4.2), theoretical memoing (see section 4.5.3) and open coding (see section 4.5.4.1) to identify and compare codes; followed by selective coding (see section 4.5.4.2) to explore the relationships between categories, connecting and grouping them to inform the core category of the research study (see section 4.5.4.3). 'Work' refers to the theory's explanatory power in relation to the phenomena studied, and therefore to its 'relevance'. The study is a relevant account as the substantive theoretical connections can be made to the field of TIA management and prevention. The findings help make sense of the experience of stress for people who have experienced a TIA. It raises the possibility of influencing the impact of perceived stress by empowering individuals to self-manage, learning new skills and build on existing positive well-being strategies. It also provides health care professionals with a rationale for including attention to stress as a component of care provided to patients with TIA. This is significant to clinical practice because it raises the opportunity to offer appropriate and timely interventions to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke (see section 6.8). Elliott and Lazenbatt (2005) argue that, whilst criteria are part of the discussion on research quality, it is more important to consider the research methods themselves from the perspective of quality in grounded theory research. The research methods themselves contributed to the quality of the study by the robust application of the classic grounded theory approach coherent with the defining traditional components of Glaser and Strauss's (1967) original work and subsequent work of Glaser (1978; 1992). Grounded theory should be viewed as a package of research methods that includes the use of concurrent data collection and constant comparative analysis, theoretical sampling, field notes and theoretical memoing, all of which create an awareness and an appreciation of the scientific merit required of grounded theory research, and promote quality standards (Elliott and Lazenbatt 2005).

A broader approach within a qualitative research tradition considered was to obtain respondent or member validation as a way of checking the interpretation of the data. Member validation involves returning to participants and checking that the accuracy of the interpretation of the data represents what they said or their experiences (Seale 1999). Elliott and Lazenbatt (2005) challenge this approach, stating that grounded theory does not require a return to the original participants to

check if participants agree with the interpretation of the data. They believe the progressive nature of theoretical sampling and constant comparative analysis suggest the research moves on to involve other people who have different experiences to see if the findings hold as new data are collected. This was the approach adopted by the study to best to address the study's research questions.

4.7 The Use of Literature

The literature was utilised at two distinct stages of the research process to serve the grounded theory methodology. Firstly, at the outset of the study a moderate non-committal review of the literature was undertaken. This was to establish a gap in the evidence base to inform and shape the research aim and questions, and develop the research proposal. Secondly, the literature was reviewed to develop the emerging theory by comparing it with current literature, theoretical frameworks and models.

The use of literature in a grounded theory tradition creates a dilemma for the researcher. Other research methodologies require the literature to be reviewed at the outset of the study, however, this has not been advocated in a classic grounded theory approach (Glaser and Strauss 1967; Glaser 1992). In a classic grounded theory approach the identification of categories from the data is central to generating theory, rather than categories being proposed deductively from existing literature (Glaser and Strauss 1967; Glaser 1992). Conversely, Urquhart (2013) proposes it is possible to review the literature before commencing a classic grounded theory research study by undertaking a non-committal review. A non-committal review is carried out on the understanding that the researcher aims to prevent it influencing the research process by keeping immersed in the data and allowing the emerging theory to determine the relevance of the literature. A decision was made to undertake a moderate non-committal review to explore current understanding of the relationship between perceived stress and TIA (see Chapter 2: Literature Review). The researcher aimed to prevent the non-committal review influencing the research process through theoretical sensitivity (see section 4.5.1) and reflexivity (see section 4.8). Theoretical sensitivity occurred by being open minded and sensitive to the discovery and exploration of concepts as they emerged from the data, asking further questions, and seeking clarity. Reflexivity was a continual process throughout the study, which required critical self-reflection of the research process including the influence of the literature review.

The literature review was required to establish a gap in the evidence base to inform and shape the research aim and questions, and develop the research proposal. The research proposal was necessary as part of the University of Stirling academic requirements in research preparation, and to gain research and ethics approvals. The literature search strategy involved systematic searches of relevant databases for published papers (see section 2.1). Literature was searched using a combination of search terms. A manual search of selected papers' reference lists was also performed. The researcher was an experienced clinician with existing insight, knowledge and experience in the field of practice under study. Corbin and Strauss (2015) acknowledge that researchers will bring their background in professional and disciplinary literature to the enquiry. This research was undertaken to add to clinical practice and one could argue by the researcher having knowledge of the area of practice enabled a deeper understanding of a complex phenomenon and for the clinical relevance to be realised.

The literature was subsequently reviewed to develop the emerging theory by comparing and contrasting it with current literature, theoretical frameworks and models. Further systematic searches of relevant databases were undertaken, specifically for theories relevant to the new substantive theory. Literature was searched using the new theory and by a combination of search terms including, transient ischaemic attack or transient ischemic attack, TIA, perceived stress, self-management, and achievement of equilibrium for health and well-being. Glaser (1992) advocates interaction with relevant literature to nurture theoretical sensitivity (see section 4.5.1) and compare similarities and convergences with findings to mature analysis and theory development. Once the core category emerged, theoretical coding was undertaken to shape and build the theory (see section 4.5.4.4). The theoretical codes were the building blocks which created the cohesion to construct and develop the theory. The theory and theoretical codes were compared and contrasted to existing literature to help with the densification and achieve a reasonable level of abstraction (see Chapter 6: Discussion). Reviewing the literature against the substantive theory demonstrated a credible relationship between concepts with explanatory and predictive power (Glaser and Strauss 1967). Exploration of the theory and it positioning within the current academic literature strengthened the position that the new substantive theory was making a unique contribution to the body of knowledge and field of practice.

4.8 Reflexivity

(Please note: as this section refers directly to the researcher it is written in the first person).

Reflexivity is a continual process in qualitative research which requires constant critical self-reflection on the research experience; and the impact of perceptions, interpretations, values and actions throughout the data collection, analysis and writing-up process (Creswell 2013). However, it is only more recently that reflexivity has received attention in the context of grounded theory, and this has mostly been within the constructivist framework (Charmaz 2006). Glaser (1978, 1992) situated personal experience and the reflexive use of self within theoretical sensitivity (see section 4.5.1). More recently contemporary classic grounded theorists have viewed reflexivity as a relevant part of the research process due to its foundations in symbolic interactionism (Neill, 2006). In terms of reflexivity, I was aware that my background and clinical experience as a stroke nurse consultant could potentially influence the research process. I have an in-depth clinical knowledge of the condition TIA, its treatment and management. My existing reflective skills were imported into the research field to increase self-awareness on the potential impact of my position, perspective and presence on the research. I was the main researcher and as such the main self-regulator. I was also practising in the field of TIA management at the time; although, my own NHS Health Board was not included in the study locations. The study was undertaken to add to the field of practice and I believe having knowledge of the clinical area enabled a richer, more developed understanding of a complex phenomenon and for the clinical relevance to be realised. The essence of grounded theory research lies in the relationship between researcher and participants (Glaser and Strauss 1967). I was open about my clinical profession with participants; and I believed this enabled participants to share their experiences in the knowledge that I had some understanding of what they were speaking about. The relationship I established with participants enabled a richer insight into responses.

Adopting a robust application of the grounded theory methods enabled a rigorous approach to the research and helped me avoid as far as possible any assumptions that I may have had. The process of field notes (see section 4.4.2) and theoretical memos (see section 4.5.3) captured my own personal thinking at the various stages of the research process and enabled self-reflection. Reflection has been linked not only to creativity and intuition in the research process but also to integrative power in analysis (Hunter et al. 2002). I was influenced by Glaser's (1978, 1992) methodological approach particularly in my analysis, especially his recommendation that one should concentrate upon emergence rather than forcing. Glaser (1978) argues that the researcher must be theoretically sensitive so they can differentiate more significant data and have insight into their meanings (see section 4.5.1). Professional experience can be one source of awareness that can help make the researcher theoretically sensitive (Holloway and Wheeler 2010). Glaser (1999) adds that researchers

must be able to tolerate ambiguity and confusion as the constant comparison of data is complex and 'messy'. I had to be patient and persistent to allow the conceptual sense to emerge from the data and generate theoretical concepts and codes that made sense of what was going on. I also had regular supervision sessions with my academic supervisors. These supervisory meetings evaluated my research processes, methods and outcomes; and any concerns, issues and questions were addressed. I utilised my academic supervisors particularly during analysis for sense-checking emerging codes and categories, and advice in relation to my ongoing approach. I believe a strength of the research is that I have retained the same two supervisors throughout the duration of my study.

4.9 Summary

This chapter presented the research methods used in the study, informed by the qualitative design and the classic grounded theory approach. The methods addressed the research aim and questions in the exploration of perceived stress for people who had experienced a TIA. Sampling commenced with a purposive sample of eligible patients. Data collection took place concurrently with data analysis during the thirteen semi-structured interviews until theoretical saturation was achieved. Data were analysed using a systematic approach proceeding through three stages of coding: open, selective and theoretical. The process of coding identified categories, connecting them by means of constant comparative analysis. Subsequent theoretical sampling enabled selective data to be collected during the participant interviews to develop the emerging categories. Field notes and theoretical memos helped develop concepts and shape relationships between categories. Theoretical coding helped construct and build the emerging theory. The research methods were dynamic, driving analysis from the unknown to the known, and leading to the discovery of a new substantive theory. This chapter summarised the research methods for data collection and data analysis undertaken and the research quality, the use of the literature and reflectivity were discussed. The next chapter presents analysis of the findings of the perceptions of stress for people who have experienced a TIA. The first part of the chapter explores the figurative journey made by study participants, before, during and after the TIA; and the second part of the chapter presents analysis of the categories that formed the core category and led to the discovery of the new substantive theory.

Chapter 5: Findings

5.0 Introduction

This chapter presents the findings from the research which aimed to explore the perceptions of stress for people who have experienced a TIA. The findings were analysed following the classic grounded theory methodology described in the previous chapter (see Chapter 4: Research Methods). The study was conducted using an iterative process of data collection and constant comparison analysis to generate the main categories, core category and substantive theory. This chapter presents the research findings which sought: to understand the relationship between perceived stress and TIA; to understand how perceived stress affected the patient's physical and mental health and well-being; and to ascertain what actions patients have taken to address factors influencing perceived stress.

The chapter begins by presenting an overview of the study findings and then reports on the sample characteristics. This is followed by a presentation of the findings that reflect the figurative journey of perceived stress as relayed by the participants before, during and after the TIA. This enabled a deeper exploration of participants' perceptions of stress in relation to TIA. The next part of the chapter presents the main categories which emerged to form the core category. Finally, the theoretical codes which build the new substantive theory are presented.

Throughout the chapter, illustrative words or phrases from the participants own accounts are integrated into the text; also key quotations from participants are used in the various sections to ground meaning to the findings.

5.1 Overview of the Findings

Perceived stress was commonly experienced by participants and it was found to be a feature in the various stages of the figurative journey of TIA. Stress was not universally acknowledged by participants as a potential contributing cause of the TIA, although it did form a part of their lived experiences. Stress could disrupt the natural balance essential for optimal physical and mental health and well-being. The natural balance or equilibrium of health and well-being after a TIA for the

individual emerged as the core category from the analysis. From the findings, stress was found to be a key influencing force. The presence or absence of stress contributed to a situation of imbalance or balance. The impact or degree of stress determined the level of imbalance or balance e.g. the greater the impact of stress, the greater the imbalance; or the lesser the impact of stress, the greater the balance. Categories emerged that can aid (stabilise) or hamper (destabilise) the sense of balance; and resources can also influence stress (influencers). To effectively manage stress a natural balance is required thereby achieving equilibrium and a state of health and well-being after a TIA. The main categories of stabilisers, destabilisers and influencers that evolved formed the core category. Once the core category emerged, theoretical coding was undertaken to shape and build the theory. The theoretical codes of: perceived stress, self-management and achievement of equilibrium for health and well-being after a TIA; were the building blocks which created the cohesion to construct and develop the new substantive theory: if stress can be effectively self-managed after a TIA a state of equilibrium can be achieved which supports health and well-being.

These findings constitute important new knowledge to inform clinical practice in relation to TIA management. They help make sense of perceptions of stress for people who have experienced a TIA. The findings bring a new appreciation that perceived stress is commonly experienced at all stages of the figurative journey and raises the possibility of influencing the impact of perceived stress by empowering individuals to self-manage, learning new skills and build on existing positive well-being strategies. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. This is significant because it raises the opportunity to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke.

5.2 Sample Characteristics

A total of thirteen patients participated in the study, all with a confirmed diagnosis of TIA from a specialist physician in stroke medicine. The patients were recruited from five different TIA hospital outpatient clinics across three NHS Health Boards in Scotland. The thirteen participants comprised of eight men and five women. Ages ranged between 36 and 74 years, with a mean age of 64 years (median age of 67 years). The number of days between diagnosis of TIA and participation in the study interview ranged from 77–585; with a mean of 344 days (median of 395 days). The rural-urban classification defines geographical areas as rural if they fall outside of settlements with more than a 10,000 resident population; therefore five participants were located in rural areas and eight

participants in urban areas. The Scottish Index Multiple Deprivation (Scottish Government 2016) quintile rates are based on postcodes and rendered as: 1 the most deprived to 5 the least deprived. Six participants were rated in the lower two quintiles and seven were rated in the upper two quintiles, indicating a fairly even distribution across quintiles. Ten participants lived with a partner, two lived with family and one lived alone. Table 14 presents the sample characteristics.

Table 14: Sample Characteristics

Participant	Gender	Age	Location	Deprivation**	Lives with:
1*	Digital recorder headings				
2	Male	69	Rural	2	Partner
3	Female	58	Urban	2	Partner
4	Male	36	Urban	1	Family
5	Male	74	Urban	4	Partner
6	Female	70	Rural	4	Partner
7	Female	67	Urban	4	Partner
8	Male	68	Rural	5	Partner
9	Female	71	Urban	4	Alone
10	Female	67	Urban	1	Partner
11	Male	65	Urban	2	Partner
12	Male	68	Urban	1	Family
13	Male	52	Rural	5	Partner
14	Male	65	Rural	4	Partner

* Note there was no number one participant as this was the headings on the digital recorder

** Scottish Index Multiple Deprivation (Scottish Government 2016): 1 most deprived to 5 least deprived

Most of the participants were smokers. Table 15 summaries participants' self-reported smoking status.

Table 15: Smoking Status

Smoking Status	
Smoker	7
Ex-smoker	3
Non-smoker	3

Table 16 summarises the number and type of co-morbidities reported by participants, which appears typical although the numbers are small.

Table 16: Number and Types of Co-morbidities

Number of Co-morbidities	
3+	4
1-2	4
0	5
Co-morbidities	
Heart Disease	5
High Blood Pressure	4
Diabetes Mellitus	4
Asthma	4
Stroke	3
Depression	1

A total of thirteen semi-structured interviews were conducted (see section 4.4.1). The duration of the interviews ranged from 17 to 66 minutes (a total time of 456 minutes), a mean duration of 35 minutes.

5.3 Figurative Journey and Perceived Stress

This section presents the findings of the figurative journey (Figure 1) before, during and after the TIA event for participants, and the role of perceived stress at each point of the journey. The figurative

journey demonstrates the emerging subcategories and categories, which through constant comparative analysis, emerged to form the core category.

At the early stages of analysis it became clear that participants spoke about perceived stress throughout their TIA journey. Participants did not place a particular emphasis on a certain point of the journey, such as the lead-up to the TIA, but spoke about different types of perceived stress at different stages of the experience and in a broad range of ways. Portraying the findings to represent the participant's journey made sense with the emergent concepts from the analysis. The term 'figurative journey' is used in a metaphorical way to express this; as the term is not intended to be understood literally.

Figure 1 presents the five main stages of the participant's figurative journey as they emerged through the analysis. The section has been laid out to reflect these main stages.

Figurative Journey				
Before the TIA	The occurrence of the TIA	The immediate aftermath	Managing after TIA	Ongoing challenges
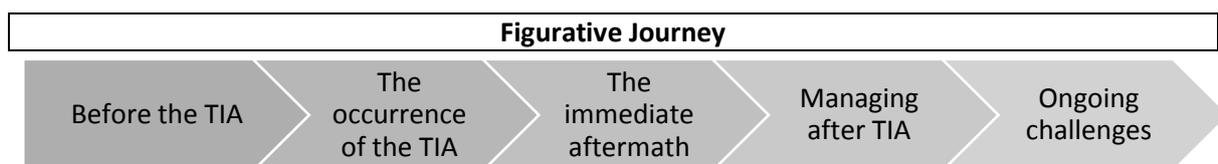
Figure 1: Figurative Journey

The figurative journey portrays participants' experiences and resulted in some main patterns emerging, conceptualised by the constant comparison of interviews. The main stages of the participants' figurative journey emerged through the analysis. As opposed to using analytical titles, these stages were expressed from participants' own illustrative phrases to further ground the meaning and understanding in the data. This was to be authentic to the grounded theory approach and ensure the emerging understanding of the phenomena was grounded in reality. They are:

> *'There was a lot of pressure going on'* – before the TIA
>
> *'Is there something happening or not'* – the occurrence of the TIA
>
> *'The instant that happens there's doubt'* – the immediate aftermath
>
> *'I've got to just stop, slow down and get my breath back'* – managing after TIA
>
> *'Worrying more about my lifestyle and everything'* – ongoing challenges

Within each stage of the figurative journey, there is an exploration of stress from the perspectives of those who had experienced a TIA. Each section is enhanced by the words and phrases of participants which have been selected as they encapsulate the concepts and themes being discussed, keeping the findings grounded in the data.

5.4 'There was a lot of pressure going on' – before the TIA

The first stage of the figurative journey presents participants' perceptions of whether stress preceded the TIA event or not; and whether it was thought to have played a role in the causation of the event.

Stress was a complex and variable feature of the participants' experience. Some identified stress as a feature in their lives before the TIA event and others did not. For those who did, the way stress presented and impacted varied. For some it was more associated with external stressors, or in other words, attributed to factors external to the individual. For others, perceived stress was more associated with internal stressors. Participants highlighted internal pressures and effects of stress before the TIA event, including trying to push themselves to do too much, physical effects on the body, varying levels of impact, and reaching a 'crisis' point. Alternatively, for some, stress was the combination and interplay of both external and internal stressors. Finally, for some there was no association made between stress and the subsequent TIA.

5.4.1 External Stressors

External pressures experienced by participants in their daily lives before the TIA event was associated with stress and its impact. These external pressures could be as part of their working life, family life or something else; and for some this had a crescendo effect.

5.4.1.1 Working Life

Participants recognised stress as being part of their current or previous paid working lives. Stress was portrayed by some as being synonymous with their work and had almost become the 'normal'.

Stresses at work were variable in intensity but often had a continuous presence. Phrases were used by participants such as *'a continual pounding'* and '*its wearing me out'* to portray the intensity. The perceived stresses were attributed to a variety of work-related aspects, including levels of workload, long hours, levels of responsibility, and working relationships with managers and colleagues. Participants explored the 'highs and lows' of work, and failing to escape the stresses. They found that they were often thinking and talking about work in their time off in the evenings or over the weekends. For some this seemed to become increasingly intense until the point where they had the TIA event. These issues are captured by the following quote:

> *'I was working 15 hour days and the rest of the time I was thinking about the work I was doing... so there was a lot of stress. At the same time we were doing this deal, a huge business opportunity came up, and it meant I was very busy as well so I literally would get up in the morning, 6 in the morning would work until like 9 or 10 and up at 6 in the morning, and it was almost like that for 6 days a week … at the weekends I was just as bad because I was worrying about the things that I needed to be doing.'* (Participant 13)

One male participant referred to his age and wondered whether he had failed to adjust to his workload as he had got older. At 68 years old, was he trying to perform as he had done when he was a younger man:

> *'We go at a fair rate, in a sense I'm trying to pretend I'm young and keep up with the younger ones and it just isn't there, I know it, I know I'm stressed.'* (Participant 8)

Another participant found the breakdown of his working relationship with a colleague created an extremely stressful situation for him to deal with:

> *'My* (business) *partner had been extremely difficult and we basically had fallen out big style and it was lawyers at dawn and all that stuff ... so there was a lot of stress.'* (Participant 13)

One participant was dealing with redundancy and its consequences and described a crescendo of stress '*building up'* (see section 5.4.1.4). For him things that contributed to the accumulative stress effect included having a lack of purposeful occupation, boredom and dealing with public bodies in seeking new employment. Demonstrated in the following quotes:

'I worked for a company for 17 years most of the company was paid off about… year and a half ago so the build up to that as well. I think it's just been building up and building up. (He went onto expand) *I think it's probably the stress was out of the boredom. You're constantly working, and then no doing nothing and then you're told to go to the job centre and the stress that they gee you... it's a build-up.'* (Participant 4)

5.4.1.2 Family Life

A source of external stress came from participants' own families. There was a wide range of family-related issues discussed, such as looking after others, serious illness, breakdown of relationships and dealing with bereavement. Some participants had dealt with more than one family-related issue so they faced the effect of multiple pressures.

For some participants, being a grandparent involved the responsibility of caring for grandchildren while their parents work. Participants conveyed the responsibilities of being a grandparent as a stressor in their lives, suggested in the following quote:

'I'm looking after a sixteen month old grandson for four hours a day!' (Participant 3)

One participant reported their grandson was a source of stress which they associated with the causation of their event:

'It was worrying over him … my grandson is a worry'. (Participant 10)

Stress for one participant was as a result of caring for her disabled husband (who had had a stroke). She explained in detail the stress associated with her caring role, the sense of being 'trapped' and the negative impact that this had on her health in the lead-up to the TIA. She was receiving support from her local authority however she found that they were not reliable, putting additional stress back onto her, as portrayed in the following quotation:

'I mean to say it is a stressful thing because the way I look at it it's just you're here 24/7 and it's just the same thing all the time. Don't get me wrong I did have words with him and all because you do lose your head. (She went on to explain further) *Phoned the office and says*

'where's the second carer? Oh (name of council) *there's no carer'. But I mean to say it happens all the time… very stressful… I do a lot for him, everything for him.'* (Participant 3)

Other family issues such as the impact of serious illness or bereavement of a family member and the associated grief increased levels of stress experienced by participants, illustrated in the following quotations:

'My Dad went through a cancer of the face... so we're going to the hospital with him a lot, so I don't know if, I tend not to worry I just put it to the back of my head, maybe been a build-up.' (Participant 4)

''Well, I lost my Mother just three years past Christmas.' (Participant 3)

5.4.1.3 Other External Stressors

Perceived external stressors came from something else for some participants. Such as financial pressures and concerns over money:

'I do worry, money and all that.' (Participant 11)

'The only thing that was worrying me was money you know.' (Participant 12)

For another participant, the perceived stress came from having to take on additional responsibilities at his local Church; captured in the following quote:

'I do get stressed, but I think that's just a part of life, not major stress. I'm fairly heavily involved with my Church… the Church haven't got a minister at the moment and you find you're actually taking meetings and that's stressful… I don't feel under stress all the time, only certain incidents you know that come along.' (Participant 5)

5.4.1.4 Crescendo of Stress

Participants that either had a major stress, or those with a number of stressors at same time, could experience a cumulative effect, illustrated in the following quotes:

'It's a build-up… but I didn't think it would cause a stroke or anything.' (Participant 4)

'It would be the last couple of years really… well, I lost my Maw… and then my partner he's been ill for ten years now.' (Participant 3)

In summary, a number of participants had experienced external stressors and their impact prior to the TIA event. These stressors were found to be associated with: their working life, particularly pressures of workload and colleague relationships; and family life, particularly undertaking a caring role and the loss of a close family member. There could also be a build-up of stress as a result of one or more stressors occurring at the same time. As well as external stressors, internal stressors were also associated with perceived stress before the TIA.

5.4.2 Internal Stressors

Participants highlighted internal pressures and effects of stress before the TIA event. Internal effects of stress were portrayed by a number of participants, including trying to push themselves to do too much, physical effects on the body, varying levels of impact, and reaching a 'crisis' point.

An internal stressor highlighted by some participants was *'trying to do too many things'* and *'pushing'* forward with the resultant impact of stress. This is articulated in the following quotation:

'I just physically try and do too many things and that's what's… wearing me out.' (Participant 8)

Perceived stress was linked by participants to their physical health and well-being. Stress was portrayed as having physical effects on the body; participants describe themselves as being *'run down' and 'physically not that great'*. Physical symptoms could also act as a trigger for people,

helping them to recognise that they were overdoing things and stress was mounting, manifesting as headaches and not sleeping well. This is demonstrated by the following quotation:

> *'My blood pressure goes up, my face goes red then I get a sore head, then I need to calm down again and everything seems to go alright…I've been stressed and went for a sleep, my pillow been* (stained) *with nose bleeds.'* (Participant 4)

Stress was portrayed as having different levels of effect or impact. Participants suggested some types of stress could be managed; while other forms of stress were more significant and had a greater impact in relation to one's health:

> '*You can take it and you can leave it and you can switch off… there's other bits of stress dig into you and that's the dangerous stuff.'* (Participant 8)

For some participants perceived stress had reached a 'crisis' point prior to the TIA event, where they described being '*worn out' and 'exhausted'.* This was articulated in more significant terms at times of extreme stress, where participants were at 'breaking point' with the inability to carry on; captured in the following quotes:

> *'There is no definitive thing you can say this did this, did that; but … possibly one of the most stressful times in my life.'* (Participant 13)

> *''There was a lot of pressure going on, so I was worn out in two or three different directions you might say.'* (Participant 8)

In summary, internal stressors were identified as a contributing feature in the lives of some participants prior to the TIA event. Participants reported trying to do too much and pushing themselves, resulting in a physical effect on their health with associated symptoms. Having considered a number of external and internal stressors experienced by participants who perceived that stress contributed to their TIA event, the findings from other participants who thought there was no association between stress and their event are now presented.

5.4.3 No Association

There were participants who did not believe that there was any association between stress and their TIA event. Whereas, other participants were either unsure or did not know if there was any relation. The following quotes illustrate those who could not see any association between what happened and stress:

> *'I honestly don't think there has been any relationship whatsoever, not that I can specifically put my finger on.'* (Participant 7)

> *'It wasn't as if I had been under any mental stress or anything like that physically I was feeling fine … I have absolutely no idea.'* (Participant 14)

The sudden and unexpected nature of the TIA occurring affirmed for one participant that there was no relation between stress and their subsequent TIA event:

> *'No definitely not. This was just straight out of the blue.'* (Participant 2)

Some participants were not sure if stress played any part in them experiencing a TIA:

> '*I've not got a lot of stress in my life. I'm the sort of person that lets it flow and if it comes it comes and if it doesn't it doesn't.'* (Participant 11)

> *'I do get stressed, but that's just a part of life.'* (Participant 5)

There were also participants who could not see any association between stress and their TIA, however, at the same time they referred to things in their lives that had caused stress:

> '(When asked about stress) *Nah not really… I do worry money and all that.'* (Participant 11)

> *'To be honest with you I have no stress… the only thing that was worrying me was money you know.'* (Participant 12)

'The nine years leading up to the TIA were the least stressful I probably have had in my life...
my mum died and everything there was a fair bit of stress with that; that was just last year.'
(Participant 14)

In summary, some participants did not believe that there was any association for them between stress and their subsequent TIA event, whereas other participants were either unsure or seem to contradict themselves.

Overall, the first stage of the journey *'There was a lot of pressure going on'* considered whether stress preceded the TIA event, and whether it played a role in the causation of the event. External stressors prior to the TIA event were experienced by a number of participants. These were found to be related to their working life, family life or something else. There could be a crescendo effect with a build-up of perceived stress as a result of one or more stressors occurring at the same time. Internal stressors were also highlighted by participants prior to the TIA event. Internal effects were portrayed as having different levels of impact on the participant's health and well-being, in some cases reaching a crisis point. In contrast, some participants did not believe there was any association between stress and their subsequent TIA event, whereas others did not know if there was any relation. The next section examines the occurrence of the TIA, and the recognition of its symptoms and action taken.

5.5 *'Is there something happening or not?'* – the occurrence of the TIA

The next stage of the figurative journey relays the occurrence of TIA; and the recognition that there was something happening. For most participants, TIA and the associated symptoms were not something they were familiar with, or had any understanding off.

The physical symptoms which accompanied TIA were the strongest indicator for participants that something was wrong with their health, although it was not always clear to them what it was. This is demonstrated by the next quotations:

'I got up and say something is no right... I moved from room to room confused, saliva pouring
out of my mouth, I says that's no right and knew something was there you know.'
*(*Participant 2)

'I went to turn the telly over and suddenly I just lost the power in my arm for maybe about five minutes or six minutes... you know yourself there's something wrong... my Mum noticed that my speech had went slightly slurred.' (Participant 4)

Some of the symptoms of the TIA, although transient in nature, had a significant impact on the participants and left them with ongoing concerns; such as the loss of vision or the ability to speak, reflected in the following quotations:

'*I did find that quite frightening the fact that it was affecting my eyesight. Actually I dealt with that* (cancer) *far better.'* (Participant 7)

'*The frightening thing was not being able to get the words out.'* (Participant 6)

In contrast, some participants thought because the symptoms were transient in nature it was less important '*I didn't really think anything of that*.' Some participants took reassurance from the short duration of the symptoms *'It only lasted, at the most a minute'*. This is illustrated in the following quotations:

'*I was out visiting relatives with my husband and we were just having an ordinary conversation then all of a sudden I couldn't speak, I knew what I wanted to say but I couldn't get it out I felt a bit dizzy but really it didn't last very long I think it was only a couple of minutes.'* (Participant 6)

'*Not alarmed because ... the effects had worn off, you know, and I can't detect any other problems since.'* (Participant 14)

With the onset of the TIA, participants also tried to rationalise what was happening because they didn't experience any physical sensation such as pain:

'*I lost a wee bit of control over my left hand I was playing bowls at the time. I didn't feel anything I could still grip and everything but I couldn't control the hand seemed to turn when I was trying to do it straight.'* (Participant 5)

Alternative explanations were often sought to provide a rationale for what had happened and the associated symptoms such as: '*I'm getting older*' and '*I was just knackered*.' Some participants attributed an alternative explanation to the incident, examples included: a recent operation for cancer; exposure to cold weather; and shopping on a hot day.

The sudden unexpected nature of the experience surprised people. For most it happened '*out of the blue*' with no warning or prelude. Due to the unexpected stressful nature of the event, participants described getting a fright or a scare when the incident happened. Exemplified in the following quote:

> '*I was at the toilet actually and I pulled up my trousers and I couldn't get the button on my trousers to fasten and then this hand went… kind of limp… but only for very few minutes and then it became alright again, but I got a scare.*' (Participant 9)

The response to the occurrence of TIA varied considerably, ranging from participants doing nothing, to going to the optician, calling NHS 24, visiting their local general practitioner, or attending the accident and emergency department. The immediacy of response to the event also varied considerably. Some participants seemed to go into denial about the TIA, ignoring the symptoms, as illustrated in the following example:

> '*I just kind of ignored it, I do with these things I'm afraid… I'm a bit remiss about these things.*' (Participant 7)

One participant even decided to ignore the symptoms and go on holiday instead:

> '*I was going to New York on holiday, I says to hell with it it's only once in our life we are doing this, I should have went to the hospital.*' (Participant 2)

If family members were present and witnessed the symptoms this often led to a more immediate response as '*the panic was on*,' demonstrated in the following quotations:

> '*My husband said right I'm going to take you to accident and emergency; and this is when they discovered it was amaurosis fugax* (TIA of the eye) *I had.*' (Participant 7)

'They (family) *finished up getting an ambulance, going down and getting checked out.'* (Participant 8)

In summary, the second stage of the journey *'Is there something happening or not?'* explored the recognition of TIA and its symptoms and subsequent response. The physical symptoms which accompanied TIA were the strongest indicator for people that something was wrong. However, the transient nature of symptoms and the lack of pain led some to the conclusion that the incident was not serious. The response by participants to the occurrence of TIA varied greatly with some taking immediate action due to the unexpected stressful nature of the incident while others ignored the symptoms. The next section discusses the immediate aftermath of the event following on from the occurrence of the TIA.

5.6 *'The instant that happens there's doubt'* **– the immediate aftermath**

This part of the figurative journey comes from when the TIA occurred. *'Doubt'* was connected to the TIA and was closely related to the stress experienced at the time. It was associated with fear, concern and uncertainty.

Participants tried to make sense of what had happened and contemplated '*Is it having an effect on me?'* and *'What the hell do I do here?'* Participants also considered the aftermath of the TIA with questions such as: *'Oh God what's going to happen now?'* and *'Where are we going to be in a year's time?'* The following quote expresses these feelings:

> *'The trouble is the instant that happens* (the TIA) *there's doubt and I had to keep trying to sort, in my mind's eye, is there something happening or not you know… it's like stress that you've got to sort of say am I really stressed or am I just going over the top.'* (Participant 8)

'It was the uncertainty' associated with the TIA which resulted in perceived stress. A significant contributor to the uncertainty was the fear of recurrence of the TIA, or a full blown stroke. This fear was evident for the following participants:

> *'My sister's a nurse as well… she said well you have to be care full cause you could take another one.'* (Participant 9)

'The initial thing is seeing off the next month or two and you are thinking oh what if I have another one.' (Participant 13)

As well as the fear associated with the risk of recurrence of the TIA or having a stroke, it was the potential consequences and impact of such a condition that concerned participants:

'There's always those who are, you know confined to a wheelchair and need everything done for them which is very sad. I would never like to be like that… I'd rather die than be in a wheelchair.' (Participant 9)

Some played out different scenarios around what would happen if they went on and took a stroke; one example of what a participant was imagining is captured in the following quotation:

'I think we were going on holiday as well I'm thinking if anything happens you know when I am away that was it. It was just frightening.' (Participant 6)

The associated fear of another event led some participants to be concerned whenever they experienced other physical symptoms, such as a headache, as they didn't know if that was '*another one coming'.* One participant feared her back pain could contribute to stress that would lead to another event:

'My pain has got worse really in my back… and I worry that would cause the stress to give me another TIA.' (Participant 6)

One participant's fears were realised when she went on to suffer a subsequent stroke when watching television and was discovered by her husband.

After attending their local general practitioner or accident and emergency department with a suspected TIA, patients were referred onto a TIA clinic. This was to enable a clinical assessment by a specialist physician in stroke medicine, and to have any necessary tests done. Participants reported a variety of tests being undertaken, for example: blood samples; head scan (magnetic resonance imaging or computerised tomography); heart tracing (electrocardiography); chest x-ray; and ultrasound of the neck (carotid Doppler):

'I think I got about fourteen samples of blood taken, I had a MRI (magnetic resonance imaging) *scan done, I'd an ECG* (electrocardiography) *done, I'd a chest x-ray done, and I'd a Doppler.'* (Participant 4)

The diagnosis of TIA was a total surprise for some participants, acting as a 'trigger' in itself for actual stress. The participants described a range of reactions to the diagnosis including shock, fear and distress. The experience of finding out about the diagnosis is captured in the following quote:

'He says I can tell you you've had a mini stroke (TIA) *… I was just totally gobsmacked.'* (Participant 3)

For some participants, the diagnosis was less definitive and was more of a 'probability' type of diagnosis, as reflected in the following quote:

'I don't honestly know (the diagnosis) *as I say, when the doctor chatted to me he says sometimes this just happens and after they did all the tests there was nothing conclusive either way.'* (Participant 6)

So some participants were left uncertain over what had caused the TIA. One participant talked of a need to find an explanation or alternative reason for why the TIA happened, as illustrated in the following statement:

'I don't know why it's happened, that puzzles me I've got to keep going till I try and get an answer to that… not understanding what happened is sort of limbo land.' (Participant 2)

A number of participants also experienced stressful life events following the TIA, such as family problems and illness, which happened to coincide. These life events lead some participants to be concerned that the stress could result in a stroke; reflected in the following quote:

'Since that (TIA) *my daughter took a total nervous breakdown… my brother who I hadn't seen for 10 years had cancer… and my daughter-in-law in the States took a blood clot… in the brain she's only 47. All those things have happened afterwards and I've been terrified … it's very difficult and worried that this would happen you know that I would develop a stroke.'* (Participant 6)

Participants explained how they tried to live their lives and adapt day to day with the associated fear of a stroke. Some found it easier with the passage of time although it was still present in the back of their minds, as illustrated in the following quote:

'It is one of those things that you do worry about occasionally … I had the fear but as it's gone on and I haven't had another … it sort of lies at the background and other things come along.' (Participant 13)

One participant talked about how their confidence disintegrated after the TIA event:

'Of course that was self-confidence out the bloody window I was feart to… go outside, watch what I was doing very unsure.' (Participant 2)

In summary, this stage of the journey *'The instant that happens there's doubt'* was dominated by the fear and uncertainty following the TIA event and this affected participants' confidence and self-belief; these concepts emerged as key subcategories. There was concern over the TIA event and the subsequent risk of it leading to a full-blown stroke, and the possibility of disability or death. The diagnosis of a TIA was a total shock for some participants, acting as a trigger for stress. For others, the diagnosis seemed less definitive and more of a 'probability' type of diagnosis that also contributed to the level of stress experienced. The level of '*doubt'* expressed by participants impacted on their ability to deal with what had happened. The next section goes on to address the participants' experience of adapting after the TIA and making changes to their lifestyle to improve their health and well-being.

5.7 *'I've got to just stop, slow down and get my breath back'*– managing after TIA

This next stage of the figurative journey goes onto present the participants' experience of managing after the TIA. The participants were asked what they had done (if anything) to help deal with stress and its impact on their health and well-being; and whether these actions had made any difference.

5.7.1 Knowledge

An awareness and understanding about stress helped participants deal with the associated '*ups* and *downs*' that stress caused. This understanding of stress and the things that helped to cope with stress were helpful '*I had to really learn what stress was'.* Sharing experiences in order to help others was also a feature, as illustrated by the following quote:

> *'I can see other folk stressing… I do try and get it over to folk you've got to be a bit more relaxed how you do things; almost teaching what I would have liked to have been taught.'* (Participant 8)

After a historical episode of depression, one participant recalled receiving cognitive behavioural therapy. He explained how he drew on this method to shape his thinking, and applied a grading system to his day-to-day life which helped him cope with perceived stress:

> *'Anytime you think of something – grade it one to nine… that method worked great.'* He goes onto discuss how he uses the grading system to prioritise something's level of importance: *'If things aren't quite right I just say stop it, what's real things and what's the stupid things I'm just getting uptight about and separate them.'* (Participant 8)

Not all participants felt they had the knowledge or understanding of what stress was or how to deal with stress. They worried about whether they were doing the right things or not, relying more on their own intuition:

> '*I don't know whether I am dealing with it right or whether I'm not… I don't know whether I am doing things right or wrong, I can only do what keeps me calm and able to deal with things.'* (Participant 6)

In summary, knowledge of stress helped the participants understand it and cope with it, and this formed a subcategory in the study. Associated with knowledge, a person's self-belief is explored next.

5.7.2 Self-belief

A participant's attitude to their circumstances had an influence around how they viewed and subsequently adapted to their situation following the TIA, and how they dealt with stress. Those who appeared to have a more positive outlook spoke of having '*belief*' that things would improve:

'*I just had this belief that it would start to get better.*' (Participant 13)

This was amplified by one participant who stated she was '*concentrating on the things I can do*'. Self-belief was closely associated with taking personal responsibility for one's own health and well-being. The TIA event seemed to create a realisation and opportunity to remember and evaluate the important things in their life, the things that created meaning and purpose, on which to focus their time and energy. This is captured in the following quotes:

'*I'm very into self-help … I just get myself sorted out ... I have self-help books that I read and enjoy… I can get myself sorted out pretty quick… to get to see what's important and what isn't.*' (Participant 9)

'*What are the important things in life, what are the things you want to do and don't sort of put them off … rather than deferring the point is have the pleasures now, have another piece of cake, go on the cruise, have the nice holidays, take the day off … Those stupid things that make you realise that this is the one chance you have got whether you believe in the hereafter or not… The one thing you know definitely is you know I am 53 so … you are two thirds of the way you go. So let's make sure I don't sit there doing stupid things when I could be doing stuff that I really like to do. Spend more time with the family, spend more time with my wife, and don't spend all the time in the work and doing things that are not quite so important… What are important for me and what other things do I want to do?*' (Participant 13)

The TIA event for the participants had also created a sense of their own mortality, encouraging them not to take their health for granted. Some also had an awareness they were '*getting older';* at a stage where the time remaining was limited and they were not going to carry on forever. Some took the positive standpoint that they had been fortunate or lucky they had not experienced lasting

disability or *'permanent paralyses'*. Part of self-belief was not associating with negative labels, language or attitudes expressed by others, for example, the use of the terms *'victim'* or *'invalid'*.

Those who appeared to have a more negative attitude to the TIA event took a more fatalistic viewpoint. They were accepting of their fate or destiny and *'whatever will be will be'*. This was captured in the following quotes:

> *'I'm 74 coming on for 75 so it's got to happen sometime you know what I mean. I'm quite philosophical it doesn't worry me.'* (Participant 5)

> *'I'm the sort of person that lets it flow and if it comes it comes and if it doesn't it doesn't.'* (Participant 11)

> *'I wasn't overly bothered. I tend to be a bit like that. I tend not to be too worried about medical things.'* (Participant 14)

Some participants viewed that taking more of a *'who cares'* attitude would enable release from some of the perceived stresses in their lives:

> *'I do have to sort of really sort of say stop, for Christ's sake, stop worrying. Who cares? And that's it, I do need to develop a wee bit of a, who cares a damn attitude.'* (Participant 8)

In summary, a person's self-belief emerged as a subcategory. The individual's attitude to their circumstances had an influence around how they viewed and subsequently managed their situation. A person's 'frame of mind' was related to a sense of control over one's own health and well-being, considered next.

5.7.3 A Sense of Control

The extent to which participants believed they had control over their own lives was discussed. Some participants considered stress as being ever present, a constant underlying presence that *'you can't actually stop'* and you can't *'switch it off'*. However, it was viewed that you can manage stress by

'*keeping it under control'.* You can also be in control of your thoughts and how you think and reflect on your situation, illustrated in the following quote:

> *''I'm pretty good at times at stepping back and saying, stop it you're worrying for no reason.'* When asked about what would keep him mentally and physically healthy: *'I'd be totally in control of what I was doing.'* (Participant 8)

The participants felt that being 'in control' would enable them to manage their stress and keep healthy. The value of a sense of control was demonstrated in the following quote:

> *'I find there is much less stress when I am dealing with things within your control, than when somebody else is doing something to you when you don't have that control… I think if it is within my control I will deal with it rather than let it drag on and creating stress because I feel much happier when I am doing something and I am dealing with the things causing the distress.'* (Participant 13)

Being one's own boss gave one participant more control over his working life and managing the associated stresses after the TIA, as demonstrated in the following quote:

> *'That's why I have my own business because then I have control over my life… the advantage is I am the boss so I can do that. So I absent myself from the place that is giving me stress I would go away go home have a cup of tea and piece of toast or something and chill out for an hour, play some music, watch something on the iPlayer or something like that, calm down feel a bit better.'* (Participant 13)

Planning was also a way of self-managing personal circumstances after the TIA, and feeling more in control of their situation. Participants felt it was important to be *'planning ahead'* for the future. This is demonstrated in the following quotes:

> *'My plan is to get back to get myself under control again and get into my regime of having things done… so be a lot of alternative things that I'll do.'* (Participant 6)

> *'Plan ahead so everything was ok you know, I could be prepared for anything.'* (Participant 2)

A sense of being out of control added to the level of perceived stress after the TIA. Some felt they were *'not in control'* and that led them to feel anxious and have a sense of not coping. This left some participants feeling all they could do was keep their *'fingers crossed'*.

In summary, a sense of being in control, or not, and the ability to self-manage stress to improve health and well-being following a TIA emerged as key subcategories. Other ways of self-managing perceived stress that emerged from the data were exercise and relaxation, which are discussed next.

5.7.4 Exercise

The benefit of regular exercise was recognised by some participants as an important aspect of health; and was described by one participant as being *'an integral part of how we live'.* There was an emphasis on the health benefits of exercise, which included managing stress and reducing the risk of a stroke. The type of activity participants engaged in took many different forms, however, the value to the individual was recognised:

> *'I walk about thirty miles a week sometimes more … I love to get out it's the best thing.'* (Participant 9)

Participants referred to the types of exercise they had found valuable; one participant enjoyed the benefits of doing a yoga class:

> *'It's mixing some of the yoga stuff but also a bit of movement and I like that.'* He also found it was a way of becoming more aware or mindful of his body: *'Telling me where your sore bits are that I hadn't even noticed.'* (Participant 8)

Physical activity was closely associated with leisure activities; this was encapsulated by participants who spoke of their interests:

> *'I have a big garden to keep and I think it's a good thing to keep going.'* (Participant 9)

Pets were also way participants engaged in physical activity and de-stressing. The value of an animal for companionship an improving one's well-being was recognised. Having a dog created a source of

purpose and focus for going out for a walk after the TIA. This is captured in the following quotes:

'The dog did me a world of good… it gave something to do each day, something instead of sitting about fed up I was out with that dog.' (Participant 2)

'Going for a long walk with the dogs even when it's snowing I think, this is great.' (Participant 9)

Some described adjustments they had made to the physical activity they undertook following the TIA event; recognising they could not physically undertake the previous levels of activity they were doing:

'I couldn't walk over the 3 miles that I had been accustomed to walking. So I cut back a little bit but you know I was still able to walk a reasonable distance but I just couldn't go quite as fast.' (Participant 13)

Some participants experienced a sense of loss when they could no longer take part in leisure activities they had previously enjoyed, often due to the physical demands. They expressed sadness at how they missed the company of being with others and taking part:

'I had to stop playing bowls … I would start trying to do my superman bit I would go with it … so I've ended up I've stopped playing bowls.' (Participant 11)

'That is another thing I miss, see that I used to go to that the golf quite often you know but I couldnae go, I couldnae keep up with the boys.' (Participant 12)

However, some participants recognised their need to be more physically active: *'I'd like to be fitter'*; but physical activity and exercise still seemed more aspirational for some, as highlighted in the following quote:

'I sit in my chair… about 10 year ago I used to walk everywhere.' (Participant 11)

When questioned about their lack of physical activity, one participant associated this with his energy levels and feeling more tired since the TIA:

'I get up half an hour later I'm away back to my bed to sleep. I'm just tired all the time. No got much energy.' (Participant 11)

In summary, exercise was reported by some participants as an effective way of keeping fit and managing stress. The associated health and well-being benefits were valued, particularly the reduced risk of a stroke, and formed a subcategory. As well as exercise, relaxation was a way to managing stress and is considered next.

5.7.5 Relaxation

The value of relaxation in relation to managing stress was discussed by a number of participants. The ability of the individual to focus their mind and concentrate on a specific task such as reading a book, listening to music seem to aid with dealing with stress. The benefits of relaxation were discussed by one participant who, prior to the TIA, had attended a course on self-hypnosis:

'I remember at the beginning of the course everybody was like that, everybody was tight; and after six to eight weeks later on and we were walking out these kind of evenings on our toes and relaxed so I started to realise what relaxation was about.' (Participant 8)

One participant reflected that being calm and relaxing was something they did instinctively:

'To cope with stress you know you have to calm down and I think I do that subconsciously.' (Participant 7)

Some of the participants recognised the challenge of relaxing and switching off their mind, as captured in the following quotes:

'I don't have any patience really. I just…it's annoying, it annoys me because you do need to switch off… relax. That is the missing bit.' (Participant 9)

'I could be calm for a wee while then something triggers it off again and that's it.' (Participant 3)

Leisure pursuits, hobbies and interests were important factors discussed by the participants. For the majority, leisure activities were a way of de-stressing. They enabled them to relax and focus their concentration. They were able to shift their thinking and put pressures and stresses to '*the back of my mind'.* A wider range of activities were referred to, examples include: reading, music, fishing, photography and painting. The value is illustrated in the following quotation:

> '*Reading I found very helpful you know. Where I could concentrate, I'm not thinking about anything else, just concentrating on a book.'* (Participant 2)

Some expressed the challenges of engaging with hobbies, such as you need to have '*time and patience'.* One participant really struggled to concentrate and gain any of the associated benefits:

> '*Watercolour and all that kind of stuff and I really do love… I love sketching and all that kind of thing but all of them you need to have time and be relaxed.'* He went to explain: '*I don't get any good satisfaction out of any of them it might be because I'm not putting enough effort in you know I'm too busy on other things.'* (Participant 8)

Holidays were another way participants used to relax by having a complete change of environment and daily routine, as reflected in the quotes below:

> '*Always try and get a holiday. America's a bit far usually go to Europe. To the Coliseum things like that you know. Like a wee bit history for I don't go daft for the sunshine, sands, I like to sit out and see what there like you know try to get a history.'* (Participant 2)

> '*Travelling, we mainly do a couple of cruises a year because that's the most relaxing thing for me… We went for a three-week cruise to get me away and while I was on the cruise I did all alternative treatments… and I felt I was rejuvenated after that.'* (Participant 6)

In summary, participants discussed the value of relaxation as a way to manage stress; although they recognised the challenges of being able to calm down and switch off. Relaxation formed one of the subcategories of the findings.

Overall, this section addressed the participants' experiences of adapting after the TIA to manage stress and make changes to their lifestyle that would have an impact on their health and well-being.

Important concepts that emerged included: knowledge of dealing with stress; a person's self-belief; a sense of control over their lives and their ability to self-manage; exercise as a way of keeping fit and reducing stress; and finally the value of relaxation and leisure activities in managing stress. Following on from exploring with participants what they had done to adapt after the TIA to manage stress, the final stage explores the ongoing challenge of stress and the individual's ability to influence it.

5.8 *'Worrying more about my lifestyle and everything'* – ongoing challenges

The final stage of the figurative journey was the ongoing challenge of dealing with perceived stress and the associated effects on health and well-being. There was awareness among some participants that life could not just carry on as before the TIA and that their pace of life had to alter. The TIA event led to changes in behaviour by some participants in order to influence perceived stress. Participants recognised the need for change, however making and sustaining the change proved much more challenging. They expressed the views '*I'm trying to work on it'* to '*make it better'.*

5.8.1 Physical Well-being

Most participants recognised the value of making changes to their lifestyle aimed at bringing improved physical health and well-being and reducing the risk of further events. However, for some participants the pressure to make lifestyle adjustments seems to be a source of stress in itself which is the opposite of the desired effect. Making changes to lifestyle for some was an ongoing challenge '*how can I change this around'.* This is captured in the following quotation:

> '*I'm probably worrying more about my lifestyle and everything. It's probably putting a lot more pressure on me than it should you know, I'm trying to not be like that it's just the way life is.'* (Participant 8)

The expectations of others surrounding the participants, such as partners, family or colleagues placed added pressures on them to make changes, having to deal with comments such as '*you must'* and '*you've got to'.* This created a challenge for participants in dealing with these expectations and the associated stresses it created. One participant referred to this as the '*suicide type approach'*

nowadays. The challenge of being assertive is something people found difficult '*it's trying to decide how to say stop - that is my stress.*' Participants balanced some of these pressures with a need to '*try and be careful how much I take on'.*

Many of the participants focused on specific aspects of their lifestyle which they perceived were affecting their health. There were a range of lifestyle factors discussed, including healthy eating, losing weight and smoking, with smoking being the most frequently mentioned.

There were a variety of views expressed in relation to smoking. The majority of participants were smokers. They acknowledged the associated risk to their health in doing so, although some would try to play this down by claiming not to be a heavy smoker. Participants recognised the damaging effects of smoking and it being a contributory risk factor for TIAs:

> '*My biggest thing is, which doesn't help I suppose, I take a cigarette... about 10 a day.*' (Participant 9)

One participant made the link between smoking and perceived stress. He articulated how he had given up smoking but when he experienced stress, smoking was his way of coping, as illustrated in the following quotation:

> '*They said that if you want to look after yourself the first thing to do is give up smoking which I kind of knew already. But it did make me think twice ... I probably ought to be not smoking. So it did have that effect on me and then being a weak willed sort of person the first reasonable sort of stress that did come in I started up again.*' (Participant 14)

Some diminished the importance of lifestyle changes and advice from health care professionals:

> '*They just tell you to take five a day, stop your fry ups, stop smoking, I am just no bothered.*' (Participant 11)

The level of importance placed on addressing lifestyle factors seemed to come secondary to medical management. Lifestyle risk factors seemed to be focused on when nothing else could be done from a 'medical perspective'. Therefore, this potentially diminished the value of addressing lifestyle factors, as captured in the following quotation:

'They said there is nothing more they can do. It's just a case of keeping the medication and getting all the risk factors down, losing weight and things like that to get everything down to normal'. (Participant 4)

Some participants expressed the view that the TIA had occurred due to them getting older and it was the natural course of things; and one should almost expect these types of health events to occur as one ages. Those participants with a more fatalistic view perceived the damage to their bodies was probably already done and not something that could be reversed. These negative attitudes could undermine participants taking personal responsibility for their health. Smoking and drinking were sometimes seen as a source of pleasure and giving a sense of purpose, and to stop would be perceived as punitive. These issues are illustrated in the following quotes:

'If you die you die that's it, nothing much I can do now I still like my fry ups ... I've been smoking for what 50-odd years so there's no sense in stopping it now all the damage is done.' (Participant 11)

'So I need to stop smoking and I need to stop drinking; so what is the point of surviving if I cannot do anything… The damage is already done, I have been smoking for over 50 years now… Really I have had my three score and ten so it doesn't bother me now.' (Participant 12)

Some seemed uninterested and disengaged from making changes to their lifestyle; referring to long established patterns of behaviour:

'I have been smoking reasonably steady but increasing amounts since I was fifteen. I was one of these naughty lads... so I have been a lifelong smoker… I still probably have a bit too much alcohol; we always have a large dram in the evening as a matter of course.' (Participant 14)

The symptoms of a TIA are transient and not enduring leading one participant to think it was not necessary to make any lifestyle adaptations:

'The symptoms were so brief three or four days, whatever it was, that I never felt the need to adapt to anything… I have made no changes at all to my lifestyle absolutely zilch.' (Participant 14)

There was a variable perception of lifestyle risk factors associated with TIA and their relationship to physical health and well-being. As well as physical health the ability to change and adapt was also linked with mental well-being.

5.8.2 Mental Well-being

Some participants expressed a connection between their mental health and well-being and perceived stress following the TIA event. Some described being more emotional following the TIA, resulting in a sense of loss of control over their emotions. They become upset more easily which could be distressing and difficult to understand or make sense of. This lasting emotional affect is illustrated in the following quotes:

> *'I don't why I had this,* (voice breaks) *sorry, why I had this emotional problem… really upset.'* (Participant 2)

> *'It's only now when they've said I have this* (TIA) *it only makes me think well I wonder if that's why I get this, bit more emotional you know.'* (Participant 5)

Participants described how *'minor things'* which previously would have not caused upset could now cause stress and emotions such as anger and frustration. Things could be emotionally fine one moment then something could act as a trigger causing stress:

> *'I could be calm for a wee while then something triggers it* (stress) *off again.'* (Participant 3)

Family and friends often noticed the changes and one participant queried whether his medication was a contributing factor, as illustrated the following quote:

> *'I'm talking to somebody, rather than talking, shouting at them, and I'm biting their heads off and short temperedness, could be generally anything… spoke to the doctor about that if the tablets are causing anything like this, just been dead stressed, my Mum and Dad would tell us to calm down.'* He went onto explain further: *'my pals noticed this seen a difference me as well… I could be very argumentative as well know what I mean and someone needs to come back and stress levels are a way through the roof again.'* (Participant 4)

Low mood was also linked to perceived stress; these lows were associated with being '*worn out*' and when people had '*overdone*' things. One participant captures this in the following quotation:

> '*I've got to say for God's sake stop, just sit, and do bugger all for a day or something like, then come back to life.*' (Participant 8)

There was a relation between mental health and well-being and perceived stress following the TIA event. Some participants became more emotional following the TIA, with minor things sometimes creating a trigger and resulting in loss of control over their emotions. Closely related to mental well-being, the connections in someone's life, whether they were family and friends, or professionals, are explored next.

5.8.3 Connections

Connections were key to the participant's health and well-being, creating a sense of belonging, nurture and being loved. They were a source of support providing a source of strength, and enabled coping with the pressures and stresses that people perceived. These connections were most commonly found in relationships with spouses or partners, within families and with friends, but also through work colleagues, and social networks in the wider community with neighbours and other contacts. This is illustrated well by the following quotation:

> '*I think I've been brought up with the Scottish idea that we support the family and the other way round and I think that's ingrained.*' (Participant 8)

Participants explained the value of these relationships in '*making a difference*'; the shared connection which was '*very supportive*':

> '*It makes every difference, it really does, really is very supportive. I think he* (husband) *worries more about me than I worry about me sometimes* (laughs)*.*' (Participant 7)

These relationships were reciprocal in nature, both giving and receiving. One participant described how his wife had shown patience with him through the TIA; but he had also been able to reciprocate that when he supported her through a subsequent knee replacement operation.

Participants expressed how the impact of the TIA event not only affected them but '*was a bit tough for everybody'.* However, partners were often enablers in helping people cope with the impact:

> '*My husband gets me to try and not to think about it, to dwell on it too much, because I think if I was left to my own devices I would dwell on it more.'* (Participant 6)

Participants expressed, not only the satisfaction at being able to help other family members, but also the challenges and related stresses. One participant stated how she 'was *quite pleased'* at her ability to help her daughter at a difficult time in her life; doing something for some else was rewarding. However, the wider family could also potentially be the creator of stresses, and caution was expressed about how much you take on:

> '*Try and be careful how much I take on that's the problem, the biggest thing, you know like with my brother* (has cancer) *I haven't taken on as much with him as I would have done if it happened with him two or three years ago I would have been doing very much more but I can't.'* (Participant 6)

Another example given was participants' grandchildren, although they were a source of pleasure, some talked about the stresses associated with caring for grandchildren:

> '*You just try and keep going …until we fall over… so we will keep going until we have got no energy left to help anybody.'* (Participant 8)

These relationships often involved a sharing of everyday responsibilities. The distribution of household tasks was frequently referred to with the participant's partner taking on more after the TIA. Partners were also used as a 'stress gauge' with one participant taking notice when her husband said '*I'm over-doing things'.* Relationships could also be a source of perceived stress. One participant explained although he had a '*great'* relationship with his wife they could also have a '*nig nag'* at each other*.* Another participant, when talking about her husband, expressed '*I don't know what I'd do without him'*; but on the other hand she also experienced a sense of feeling smothered and frustrated following the TIA event at not being able to be more independent:

> '*He does everything for me I don't do anything in this house, he doesn't let me'.* (Participant 10)

This sense of being overprotected by a partner could potentially be related to the partner fearing another event, as shared by one participant:

'My wife was worried about it (recurrence) *so I would go for a walk and she would get somebody to go for a walk with me. I can manage myself; no what happens if you have one.'* (Participant 13)

Sometimes a participant found their partner's actions in trying to be helpful had the opposite effect. One example of this was when a partner got a childhood picture enlarged and framed but the participant found it too hard to look back to the past and at his former self as a child:

'Wife had got a photograph when I was a child, 2 year old or something, you know, she blew it up put it up on the wall, you know, happy memories, you know … I couldn't face that way back to childhood I just couldnae look at it.' (Participant 2)

On resuming work, some participants found work colleagues to be a source of support and help:

'The staff … some of them sort of keeping an eye on me and making sure that I wasn't working too hard… It was nice people were caring.' (Participant 13)

Social networks within the wider community such as neighbours had a role to play as well. Participants found this created a sense of connectedness with the community and local activities going on. It made one participant feel part of something bigger than themselves, captured in the following quotation:

'It is solitary confinement you know… when the neighbours go up and down … when they go by the window they will give us a wave, you know it sort of lifts you up… it lets you know you are still part of the world.' (Participant 12)

Participants who experienced a lack of connection with others expressed a sense of loneliness and social isolation:

'You are just lonely, you know, you can talk to the dog but he doesn't talk back to you.' (Participant 12)

Participants also wanted to extend beyond their own social networks and expressed an altruistic viewpoint with a desire to make a positive difference and *'help others'*. They wanted to connect with others, offer peer support, and share their own experiences to help those who had been '*through the same thing.'*

In summary, connections were key to the participants' health and well-being and buffered the impact of perceived stress; forming a subcategory in the study. These relationships were most commonly found with spouses or partners with some dynamics being highly beneficial and other aspects being a source of perceived stress. Social networks within the wider community with neighbours and others were also important means of support. Another connection which could influence a participant's well-being was with health care professionals.

5.8.4 Health Care

The participants' experiences of health care varied, with some expressing positive encounters and receiving '*good attention',* while others less so. The analysis showed that participants placed particular importance on communication and the provision of information from health care professionals; especially if there had been a perceived shortfall. Participants encountered professionals in a variety of health care settings, however, none recalled conversations around stress in relation to their TIA, or being given any specific advice or information on the topic. They had a variable experience in relation to emotional support from health care professionals. They expressed value in someone listening to them, and where this was perceived to be lacking, strong negative views were expressed:

> *'Nobody seems to listen to you. At times I'd think something's got to happen before somebody will'.* (Participant 3)

The types of advice and support that people felt would be useful to receive from health care professionals included: information about TIA; how the condition is treated and managed; and what people can do to help themselves to cope with stress. Expressed by the following participant:

> *'Probably would like more information about this TIA and how people do deal with it because I don't know if I am dealing with it right or not. I can only think that I am.'* (Participant 6)

Some expressed the view that health care professionals seemed to show a lack of concern over the risk of a further TIA event or stroke:

> 'They didn't seem to be concerned about, you know about it happening again. I think I was more concerned.' (Participant 6)

Some participants felt that health care professionals could be much more frank and direct in their communication about the risk of stroke, the impact of having a stroke, and how lifestyle factors can influence this:

> 'Say well there is a 70% chance you are going to have another one and it is going to be more severe or something like that. If I had been told that and they said 'this is what you would do about it' then I would, you know, I might have done something about it... I think the most valuable thing, if it was applicable, would have been more direct advice on lifestyle ... If they said to me look 'you have got to stop smoking otherwise you will have another one' that would have been a different kettle of fish.' (Participant 14)

Participants placed importance on communication, information and support from health care professionals. Some participants perceived a lack of communication and provision of advice and information; with the belief that health care professionals should place more emphasis on dealing with the risk of a possible further event.

Overall, this final stage of the figurative journey explored the ongoing challenges of dealing with perceived stress and the associated effects on health and well-being. This stage encompassed the participant's individual risk factors, emotional effects, connections, and health care provision. Lifestyle changes varied due to different perceptions of risk factors and their relationship to health. Some participants found an emotional impact of the TIA affected their ability to cope with perceived stress. Connections were also key to the participant's health and well-being, and they may buffer the impact of perceived stress. In relation to health care, participants placed importance on communication, information and emotional support from health care professionals.

This section of the findings chapter depicted an exploration of the figurative journey before, during and after the TIA event for the study participants; and the role of perceived stress at each point of

the journey. It reflected the five main stages of the participant's figurative journey that emerged through the analysis of findings, as follows:

'There was a lot of pressure going on' – before the TIA

'Is there something happening or not' – the occurrence of the TIA

'The instant that happens there's doubt' – the immediate aftermath

'I've got to just stop, slow down and get my breath back' – managing after TIA

'Worrying more about my lifestyle and everything' – ongoing challenges

Participants spoke about perceived stress at the different stages throughout their journey and the impact on their health and well-being. The figurative journey demonstrated the emerging subcategories and categories, which through constant comparative analysis, emerged to form the core category and new substantive theory which are presented in the next section.

5.9 Core Category

This section builds on the previous section, the figurative journey, to present the core category from the analysis of the data. The analysis sought to explore the perceptions of stress for people who have experienced a TIA. In particular, to understand the relationship between perceived stress and TIA; the effect of perceived stress on physical and mental health and well-being; and actions taken to influence perceived stress. The participants' perceptions of stress were instrumental in helping make sense of the experience in relation to TIA. The core category emerged naturally towards the end of the selective coding process. The constant comparison and clustering categories supported the emergence of the following core category: the equilibrium of health and well-being after TIA for the individual.

5.9.1 The Equilibrium of Health and Well-being after TIA

Perceived stress was commonly experienced by the participants and it was found to be a feature in the various stages of the figurative journey of TIA. However, although stress was not universally acknowledged by participants as a potential contributing cause of the TIA, it did form a part of their lived experiences. Stress as perceived by the individual disrupted the natural balance essential for

optimum physical and mental health and well-being. Building on the figurative journey, the categories that emerged which formulate the core category of the study have been symbolically illustrated as weighing scales (Figure 2). The weighing scales represent the core category: the equilibrium of health and well-being after TIA for the individual. To effectively manage stress requires a balance of the weighing scale, thereby achieving a state of optimum health and well-being after TIA. If the weighing scales are balanced, and the indicator between the two scales is centred, then the correct equilibrium is achieved. From the study findings, stress was found to be a key influencing force and it can be seen as forming the main balance beam on the weighing scales. The presence or absence of stress may contribute to a situation of imbalance or balance. The impact or degree of stress can determine the level of imbalance or balance e.g. the greater the impact of stress, the greater the imbalance; or the lesser the impact of stress, the greater the balance. Categories that emerged can aid (stabilise) or hamper (destabilise) the sense of balance; resources can also influence stress (influencers).
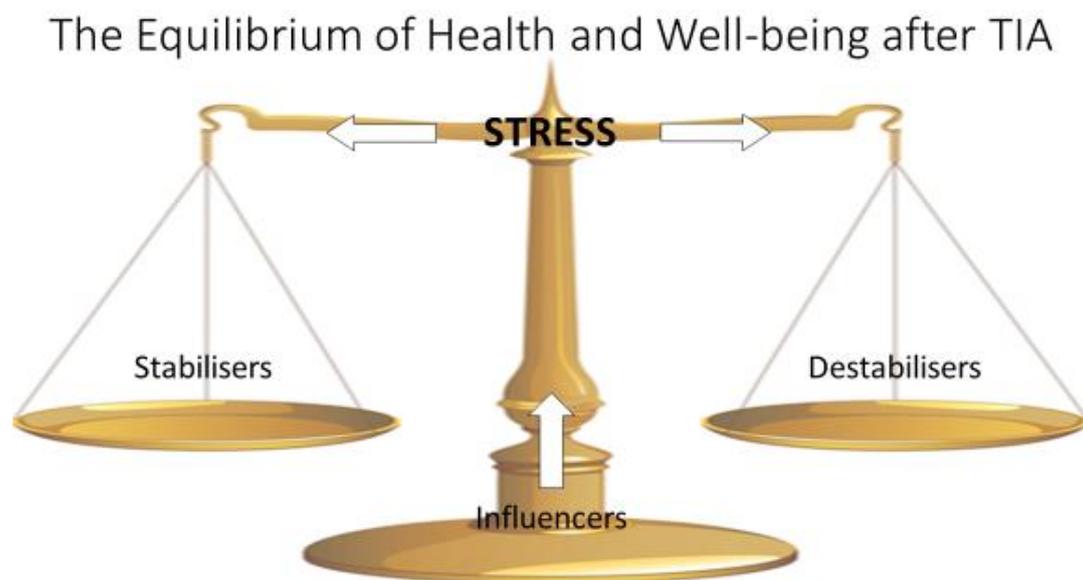
Figure 2: The Equilibrium of Health and Well-being after TIA

5.9.2 Categories

Stabilisers, destabilisers and influencers were the main categories that emerged from the data (Figure 2). Stabilisers and destabilisers can be viewed as forming the two weighing plates on the scales. Stabilising factors are able to lessen the effect of stress and create more of the sense of

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balance having a positive effect on the individual's health and well-being. Stabiliser concepts that formed subcategories that emerged through the analyses of data included: confidence (certainty), being in control, and coping (Figure 3). Destabilising concepts worsened the effect of stress and created more of the sense of imbalance having a negative effect on health and well-being. Destabiliser concepts that formed subcategories and emerged through the analyses included: fear (uncertainty), being out of control, and not coping (Figure 3). The response of participants to stress varied, with some being able to cope better than others. Those that coped better achieved a greater sense of balance through the use of resources categorised as influencers, the other main category. Influencers helped regain well-being by influencing stress and can be seen as forming the base plate of the scales. They can have a direct effect on stress, the main balance beam on the weighing scales. Influencer subcategories that emerged were: knowledge and self-belief, relaxation and exercise, and connections, as illustrated in Figure 3.

The Equilibrium of Health and Well-being after TIA

STRESS

Stabilisers
Confidence (certainty)
In-Control
Coping

Destabilisers
Fear (uncertainty)
Out of Control
Not Coping

Influencers
Knowledge and Self-belief
Exercise and Relaxation
Connections
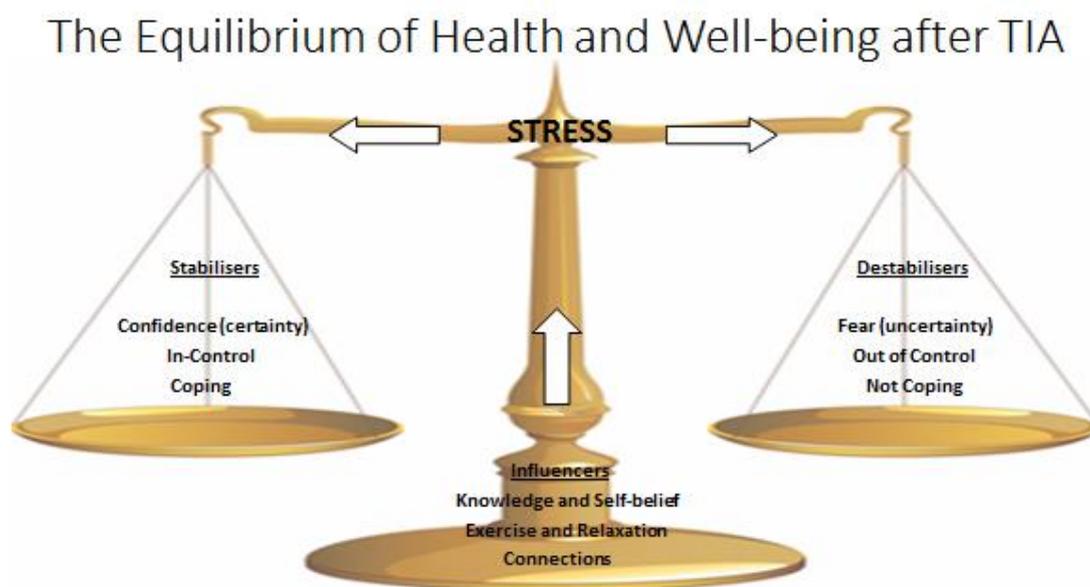
Figure 3: The Equilibrium of Health and Well-being after TIA with categories

The next section goes onto expand on the main categories: stabilisers, destabilisers and influencers and how these featured in the analysis and throughout the figurative journey, as experienced by the participants. Expanding on each category demonstrates how they are grounded in the findings.

5.9.3 Stabilisers of Stress

Stabilisers were one of the categories which formulated the core category of the study (Figure 2). Stabilisers were factors that could stabilise the impact of stress and create a sense of balance essential for optimum physical and mental health and well-being. The stabiliser concepts that emerged through analyses of the findings included, confidence (certainty), being in control, and coping (Figure 3). Stabilisers could influence the state of equilibrium by lessening the opposing destabilisers. However, some participants appeared to be able to achieve a greater sense of balance than others. Of those participants who did achieve a sense of balance, stabilisers were found to be a more prominent feature. There was a close interplay between stabilisers and influencers. Influencers could enhance the stabilising features and therefore are also expanded upon in this section.

One of the key stabiliser subcategory that emerged was confidence. Analysis of the data demonstrated that confidence was closely associated with certainty. Confidence was found to be a feature at the different stages of the figurative journey for participants. Where individuals had a high level of certainty this manifested as confidence. They believed they could rely on themselves and this was reflected in their attitudes and behaviours.

Knowledge of their situation was an influencing factor that created certainty for participants. Knowledge was particularly emphasised 'before the TIA' and later in the figurative journey while 'managing after TIA'. This understanding was in regard to: what had happened, what it meant, and how to deal with it. Participants were more confident when the TIA had been recognised and diagnosed, and any investigations or treatments had been undertaken. They felt more assured when they knew what had happened, what they were dealing with, and what they potentially faced in the future. There was also the knowledge of what stress was, which helped participants deal with the '*ups* and *downs'* better. An understanding of stress and the various influencers that helped cope with stress had accumulated over time:

> *''I had to really learn what stress was through the years.'* (Participant 8)

Participants expressed the view that sources of information were a means to gaining understanding. On reflection, participants placed an emphasis on health care professionals in providing that information and advice about TIA. Knowledge and understanding were influencing factors that gave them confidence, thereby creating certainty and improving overall health and well-being.

Belief in oneself was another influencing factor that created confidence for participants. Like knowledge, self-belief was particularly emphasised 'before the TIA' and later in the figurative journey while 'managing after TIA'. The participants that appeared to have a more confident outlook spoke of having belief in themselves. They had the belief that things would get better and improve:

'*I just had this belief that it would start to get better.*' (Participant 13)

Self-belief was associated with taking personal responsibility for one's own health. This was amplified by approaches such as adopting a *'can do'* attitude, demonstrated by the following participant who focused on the things she could do:

'Concentrate *on the things I can do, and get myself built up to be able to do them.*'

(Participant 6)

Some participants maintained a positive frame of mind by not accepting negative labels, language or attitudes expressed by others, for example, they did not like it when people used the terms '*victim*' or '*invalid*'.

Confidence was also associated with connections. These connections were most commonly found in relationships with spouses or partners, within families and with friends, but also within the wider community. Connections were particularly emphasised at 'the occurrence of the TIA' and later in the figurative journey while managing 'ongoing challenges'. Connections were important to participants and their health and well-being. Participants explained the value of these connections in '*making a difference*' both in terms of how they coped emotionally and practically. They created a sense of belonging and of being nurtured and loved. They were a source of both emotional and practical support, providing individuals with the strength and ability to cope with stresses. Connections were an influencing factor that gave them confidence, thereby creating stability and improving overall health and well-being. The following participant expresses the effect on her relationship with her husband:

'*It makes every difference, it really does, and he really is very supportive.*' (Participant 7)

The next key stabiliser concept that emerged was being in-control. Stress was viewed by some participants as being ever present; having a constant underlying presence that *'you can't actually stop'* and you can't *'switch off'*. However, it was perceived that stress could be managed*:*

> *'I find there is much less stress when I am dealing with things within my control.'* (Participant 13)

At the time of 'the occurrence of the TIA', part of sense of control for participants was taking the view that they had been fortunate, that the TIA had been of short duration with no lasting effects. The following participant felt lucky that the TIA had not resulted in a disability:

> *'I am very fortunate I wasn't left with permanent paralysis.'* (Participant 2)

Participants expressed taking control of their situation by planning. Planning ahead was emphasised whilst 'managing after TIA'. Participants expressed views on planning and making the change, and sustaining the change *'I'm trying to work on it'* and *'trying to make it better'.* Having a plan was found to be helpful as it aided being *'a good organiser'.* It created a sense of autonomy and empowerment and restored control:

> *'My plan is to get back to get myself under control again.'* (Participant 6)

As well as planning your time and activities it was also about pacing activities in line with your energy levels. Being mindful about how much you committed to was one of the techniques adopted:

> *'I try and be careful how much I take on.'* (Participant 6)

The final key stabiliser concept that emerged was coping with perceived stress. Participants recognised that in order to manage stress they needed to act, change and adapt. Coping behaviours such as self-management, stress management, exercise and relaxation, were all emphasised 'before the TIA' and later in the figurative journey whilst 'managing after TIA'. Coping was also associated with self-belief by taking personal responsibility and managing one's own health and well-being:

> *'I'm very into self-help … get myself sorted out … to see what's important and what isn't.'* (Participant 9)

Participants expressed a change in their thoughts and behaviours from before the TIA to after, with a focus on the important things in their lives. Important things were things that had meaning and purpose for the individual. Making positive lifestyle choices and changes, proactive approaches to managing stress, and using self-management techniques to cope:

'What are the important things in life, what are the things you want to do … spend more time with the family, spend more time with my wife, and don't spend all the time in the work' (Participant 13)

Sometimes it required acceptance of limitations and adapting accordingly such as: '*I've just got to not be stupid and try and overdo things'.* The following participant recognised some physical limitations following the TIA and the need to make some adjustments:

'I'm trying to just keep myself fit and all that kind of thing and I realise at times that I can't quite do as much.' (Participant 8)

Both exercise and relaxation were influencing factors on coping with the effects of stress. Exercise and relaxation were self-management techniques which aided health and well-being. Exercise was reported by some participants as an effective way of de-stressing, and keeping fit and healthy. The following participant kept active through a range of activities, including bowls and walking:

'I still keep as active as I can you know, I play bowls, well in the winter like, two or three times a week, so I keep active and I try to walk a bit.' (Participant 5)

Exercise was considered an important aspect with it being described as '*an integral part of how we live'.* The health benefits of physical activity were seen as a vehicle to also prevent further events and health problems '*I've got to stay healthy physically'.*

Pets were also a way of participants de-stressing and also engaging in physical activity, as described by the following participant when taking his dog out for a walk:

'Found it very relaxing … going out for a walk, fresh air, but I was concentrating on the dog not concentrating on everyday worries you know.' (Participant 2)

Relaxation was expressed as an effective way of coping with stress:

> *'To cope with stress you know you just have to calm down.'* (Participant 7)

Participants recognised the importance of adaptation around work and leisure activities to cope with stress. Some participants emphasised the important role work played in their lives; giving a real sense of value and purpose. One participant described the sense of purpose having his own business gave him and also linked this to giving him a sense of control:

> *'That's why I have my own business because then I have control over my life.'* (Participant 13)

Leisure pursuits, hobbies and interests were an important factor discussed by participants. For the majority of participants, leisure activities were a way of de-stressing, enabling them to cope, relax, and focus their concentration. They were also able to put concerns, pressures and stresses to *'the back of my mind'.*

> *'My hobbies golfing, fishing, working in the garden … so they are my ways of relaxing.'* (Participant 14)

Figure 4 illustrates the interconnected links between the figurative journey as presented earlier in the chapter (Figure 1) and the main category: stabilisers (Figure 2). The figure presents the five stages of the figurative journey, the main category stabilisers and the subcategories of: confidence (certainty), being in-control and coping are presented (Figure 3). Under each subcategory the main concepts are listed under the appropriate headings for the stage of journey.

Figurative Journey				
Before the TIA	The occurrence of the TIA	The immediate aftermath	Managing after TIA	Ongoing challenges
Stabilisers				
Confidence (certainty)				
Knowledge	Partner/family support	Clarity of diagnosis	Knowledge	Partner/family support
Self-belief	Recognition of Event	No lasting disabling effects	Self-belief	
In-control				
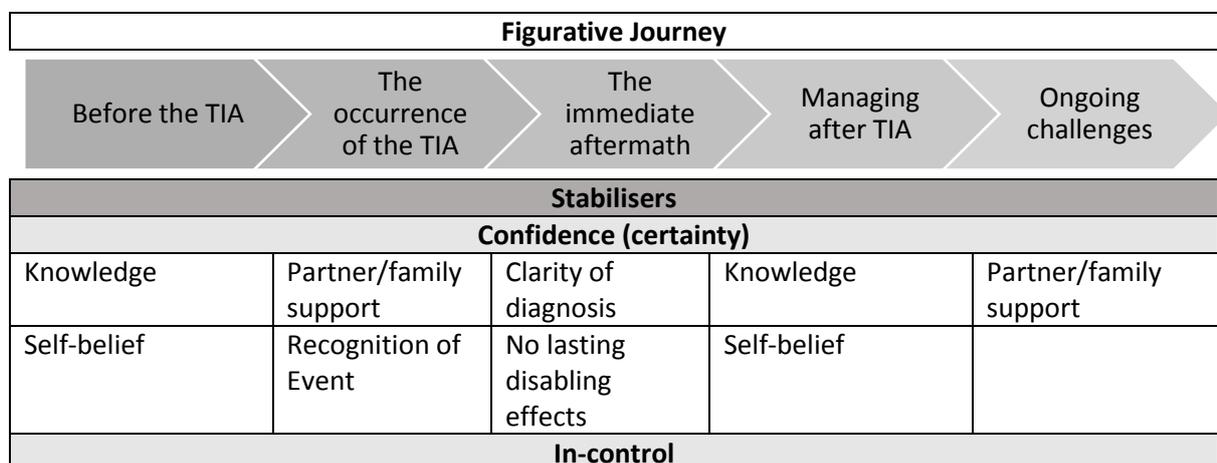
Stability	No lasting effects	Known entity	Planning ahead	Active changes
Coping				
Self-manage health	Taking action	Acceptance	Self-management	Positive changes
Stress management			Exercise and relaxation	Social networks

Figure 4: Figurative Journey and Stabilisers of Stress

Having explored stabilisers as a category that emerged which formulated the core category of the study, the next section explores destabilisers.

5.9.4 Destabilisers of Stress

Destabilisers were another category that emerged from the findings which formulated the core category of the study: the equilibrium of health and well-being for the individual after a TIA (Figure 2). Destabilisers were factors that could increase stress and hamper the sense of balance essential for physical and mental health and well-being. The destabiliser concepts that emerged through analyses of the findings included, fear (uncertainty), being out of control, and not coping (Figure 3). Destabilisers influenced the state of equilibrium by creating imbalance and countermanding stabilisers. There was also a close interplay between destabilisers and influencers. Influencers could affect the destabilising features and therefore are also expanded upon in this section.

One of the key destabiliser concepts associated with perceived stress that emerged from the findings was fear. Fear was an unpleasant emotion experienced by participants caused by the potential threat of harm. Fear was closely associated with uncertainty. It was a recurring feature at different stages and in different ways throughout the figurative journey. However, fear was particularly evident at the 'occurrence of the TIA' and in the 'immediate aftermath'. The unknown and unexpected nature of the TIA event happening *'out of the blue',* left some fearful about the situation and their future. This is evident from the following participant's expression at the time of the TIA:

   'I really got a scare, I thought I'm away to take a stroke here.' (Participant 9)

There was also uncertainty for some participants over what had happened. For some participants the doctor was not able to give a definitive diagnosis due to the nature of the presentation and transient symptoms. Therefore some participants were given a possible or probability diagnosis of TIA rather than a definitive one. This left them fearful and uncertain about exactly what had happened:

> '*They* (doctors) *couldn't say yes or no that anything had happened but there's the possibility.*' (Participant 8)

Other participants were left with the uncertainty over what had actually caused the TIA in the first place:

> '*I never knew what caused it … I really don't know.*' (Participant 10)

Fear had prominence in the immediate aftermath of the event where participants felt '*doubt*' and were trying to make sense of things. The uncertainty was connected with what had happened, the effect on them; and what it meant. Participants tried to make sense of the situation:

> '*I think one of the things after the TIA thing, it was the uncertainty of knowing had it happened; is it having an effect on me? It was the worry about that was more of a problem than the concept of it actually having happened.*' (Participant 8)

Part of the fear was the uncertainty of recurrence. Participants contemplated their risk of having another TIA, or a full-blown stroke and the associated disability, or even death. The following participant articulates this fear caused by anticipation that it could happen again:

> '*It was just frightening… at the back of my head; thinking is this going to happen again?*' (Participant 6)

Participants also had thoughts about what the future might hold: '*Oh God what's going to happen now?*', and what was to come: '*where we're going to be in a year's time?*' The number of unknowns and lack of answers in the immediate aftermath fuelled fear and uncertainty.

The next key destabiliser concept that emerged was being out of control. Loss of control added to the level of associated perceived stress and featured throughout the figurative journey. In relation to the 'occurrence of the TIA' and 'the immediate aftermath' participants felt they were not '*in control'*, creating a sense of helplessness.

Loss was experienced at the time of the event, in relation to the symptoms experienced, such as a loss of speech creating that sense of being out of control, highlighted in the following quote:

> '*The frightening thing was not being able to get the words out… I would hate… not to be able to talk.'* (Participant 6)

The loss of control left some participants feeling confused and desperate, unclear about what actions they should be taking: *'what the hell do I do here?'* The loss of control left them thinking they were powerless and unable to influence or change things:

> '*You can't do anything about it.'* (Participant 14)

Some participants expressed a view of leaving things to chance or luck, and all they could do was '*keep my fingers crossed'*. Whereas, other participants expressed a fatalistic viewpoint, accepting of their fate or destiny and '*whatever will be will be'*.

Another loss of control aspect associated with perceived stress that participants found was in relation to their emotions. Some participants described being more emotional following the TIA, describing how trivial things which previously would have not caused upset could now lead to emotions such as anger and frustration. These emotions could be distressing and difficult to understand or make sense off. This is illustrated by the following participant:

> '*Minor things upset me you know no cool calm and collected now.'* (Participant 2)

The balance of power and control within relationships could also be affected when 'managing after TIA'. Some participants found partners were being too helpful and over-protective, resulting in feelings of helplessness and unhappiness:

> '*He* (husband) *does everything for me … I'm not happy.'* (Participant 10)

The final key destabiliser concept that emerged that could create stress and imbalance was a sense of not coping. 'Before the TIA', life events and the resultant impact of stressors had reached a tipping point for some participants where things had become too much. Pressures experienced by participants in their daily life had reached a climax. These stressors could be related to their work, redundancy, marital breakdowns, family relationships or illness, caring roles or bereavement. This is captured in the following participant's words:

'One of the most stressful times in my life.' (Participant 13)

Participants connected the stressors to their physical health with resultant physical effects on the body. Participants described themselves as being *'run down', 'worn out' and 'exhausted'.* This is articulated by the following participant:

'Just simply the body saying for God's sake I don't have the energy, I can't do it anymore.' (Participant 8)

Participants who had multiple perceived stresses going on at one time in their life experienced a cumulative effect. A crescendo effect of stress was portrayed with the effects building up over time. This was perceived as potentially dangerous resulting in them being more vulnerable or at risk of an event, as articulated by the following participant:

'It's a build-up, and a build-up, and a build-up, but I didn't think it would cause a stroke.' (Participant 4)

Participants who had multiple perceived stressors due to a number of life events occurring at the same time described it as a bad mix or combination. In other words, creating a 'bad cocktail' which they perceived resulted in the TIA event:

'It was a combination of factors.' (Participant 14)

For some participants the 'ongoing challenges' of making lifestyle changes seems to be a cause of stress which is perhaps the opposite of the desired effect. The pressures from others with attitudes such as *'you must'* and *'you've got to'* added to the stresses of trying to make change whist managing these expectations.

Analysis of the data revealed poor coping mechanisms which were often associated with more negative behaviours such as smoking, drinking alcohol and lack of physical activity. Sometimes these behaviours were in excess, disrupting the natural sense of balance essential for health and well-being. They were often closely associated with participants who lived chaotic lives which lacked structure or routine, and continued behaviours which had a negative impact on their future health:

'I have made no changes at all to my lifestyle absolutely zilch.' (Participant 14)

Those who continued to smoke were often in denial or played down the potential harmful effects:

'I take a cigarette… and I enjoy that and I find it very difficult to stop.' (Participant 9)

Some participants adopted a fatalistic attitude stating '*what will be will be*'; this could be associated with negative consequences such as undermining personal responsibility for health.

Often influencers to coping with the effects of stress were absent, such as exercise or relaxation. In relation to a lack of exercise, awareness was expressed by the following participant:

'I don't get enough exercise and I do nothing but sit.' (Participant 10)

There were those who found it difficult to relax; the following participant describes stress being perpetuated:

'It's one of the problems in not being able to do good relaxation or to switch off the problem is I finish up with too many things going around my head… I just get tighter… not being able to do good relaxation or to switch off.' (Participant 8)

Finally, another influencer of stress which was lacking for participants was connections either with family and friends or health care professionals. Participants relayed stories where relations with individual family members had become fractured or had broken down; these often overlaid the figurative journey. Others openly expressed a lack of contact with others and a sense of loneliness, expressed by the following participant:

'I am just lonely now you know. I mean I am no looking for sympathy but you do feel alone.'
(Participant 12)

Other participants referred to health care professionals and the role they played. Some expressed the view that they did not feel listened to or the care they had received had not felt personalised to them. Captured by the following participant:

'Nobody seems to listen to you.' (Participant 3)

Others expressed the view that a lack of information from health care professionals had contributed to the lack of understanding about TIA and dealing with the consequences:

'Would have liked more information about this TIA and how people do deal with it.'
(Participant 6)

Figure 5 illustrates the interconnected links between the figurative journey presented earlier in the chapter (Figure 1) and the main category: destabilisers (Figure 2). The figure presents the five stages of the figurative journey, the main category, destabilisers, and the subcategories of: fear (uncertainty), being out of control and not coping (Figure 3). Under each subcategory the main concepts are listed under the appropriate headings for the stage of journey.

Figurative Journey				
Before the TIA	The occurrence of the TIA	The immediate aftermath	Managing after TIA	Ongoing challenges
Destabilisers				
Fear (uncertainty)				
External/Internal stressors	Unknown	Unclear diagnosis	Sense of loss	The future
Impact of stress		Stroke/Disability		
Out of control				
Instability	Physical effects of the TIA	Unknown entity	What next?	Emotional
			Triggers	Overprotection
Not coping				
Lifestyle risks	Ignore	Denial	Continued lifestyle risks	Lack of social support/networks

Inattention/neglect of health			Inattention/neglect of health	Loneliness

Figure 5: Figurative Journey and Destabilisers of Stress

Having explored the category destabilisers and the interplay with influencers, the next section expands on the role of influencers.

5.9.5 Influencers of Stress

Influencers play an 'influencing' role in the type and degree of stress perceived by the individual (Figure 2). Influencers are one of the categories that emerged from the findings which formulated the core category of the study. Influencers could impact on stress by influencing stabilisers and destabilisers as discussed in the previous sections (see sections 5.9.3 and 5.9.4). Influencers therefore have an effect on the individual's sense of health and well-being. The influencer concepts that emerged through analyses of the findings included, knowledge and self-belief, exercise and relaxation, and connections (Figure 3). There was an interplay between influencers and both stabilisers and destabilisers.

'I understand what stress is'- participants' understanding and knowledge of TIA and stress influenced how they dealt with the '*ups* and *downs'* and '*pressures'* experienced throughout the figurative journey. The understanding of stress and the various techniques that can help cope with stress occurred over time.

Self-belief was associated with taking personal responsibility for one's own health. This was amplified by approaches such as adopting a *'can do'* attitude and having a more confident outlook.

Exercise was recognised by participants as an effective way of de-stressing and keeping fit and healthy. It is seen as an important aspect, being described as '*an integral part of how we live'* and the health benefits of physical activity were seen as a vehicle to prevent further TIA events '*I've got to stay healthy'.* The value of relaxation in relation to influencing stress was expressed by participants. Those who lack the influence of relaxation expressed feelings of being unable to switch off or feeling tense.

Connections were important to participants' health and well-being, creating a sense of belonging, nurture and being loved; a source of support; and creating the strength and ability to cope with stress. These connections were found in relationships with spouses or partners, families and friends, work colleagues, neighbours and other contacts. Participants explained that the value of the shared emotional connection was '*very supportive*' and these relationships were '*making a difference*'. The social support created a buffer for the effects of stress. Where participants perceived connections to be disrupted caused turmoil and unease, and where they were lacking left participants feeling lonely.

Figure 6 illustrates the interconnected links between the figurative journey presented earlier in the chapter (Figure 1) and the main category: influencers (Figure 2). The figure presents the five stages of the figurative journey, the main category influencers and the subcategories of: knowledge and self-belief, exercise and relaxation, and connections (Figure 3) as they featured across all the stages of the journey.

| Figurative Journey				
Before the TIA	The occurrence of the TIA	The immediate aftermath	Managing after TIA	Ongoing challenges
Influencers				
Knowledge	Connections	Knowledge	Knowledge	Connections
Self-belief			Self-belief	
Exercise and relaxation			Exercise and relaxation	
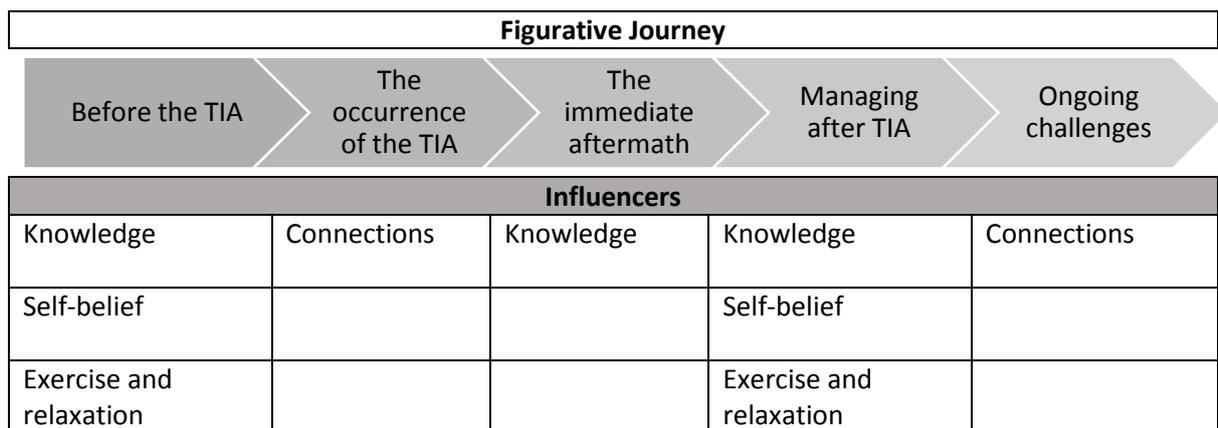
Figure 6: Figurative Journey and Influencers of Stress

Having presented the core category and the main categories which formed the core category, the new substantive theory that emerged and component theoretical codes are presented next.

5.10 Substantive Theory

The research study led to the discovery of a new substantive grounded theory:

If perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being.

The new substantive theory conceptualises the relationship of perceived stress and TIA. The overall analysis led to the emergence of the theory, that to effectively manage stress requires a balance of the weighing scale (Figure 2), thereby achieving a state of equilibrium essential for optimal physical and mental health and well-being after TIA.

Once the core category emerged, theoretical coding was undertaken to connect, shape and build the theory (see section 4.5.4.4). The identification and formulation of theoretical codes were essential to generating a theory. The theoretical codes not only came from the data, but were systematically worked out in relation to the data during the analysis. The codes were the building blocks which created the cohesion to build the theory. The theoretical codes comprised of the following: perceived stress, self-management, and achievement of equilibrium for health and well-being. The theoretical codes were compared and contrasted with relevant literature to help with the maturity and densification of the theory. The theoretical codes are briefly discussed now although they are more fully explored in Chapter 6: Discussion.

The theoretical code perceived stress was commonly experienced by participants at all stages of the figurative journey: before, during and after the TIA. Although it was not universally acknowledged by participants as a potential contributing cause of their TIA, it did form a part of their lived experiences. Perceived stress was seen as an influencing force in achieving health and well-being. Its presence and level of impact was a determining factor in achieving a natural balance of health and well-being for the individual.

The next theoretical code was self-management. The person's own ability to cope or not with stress can aid (stabilise) or hamper (destabilise) their sense of balance of health and well-being. Key concepts that were found to either stabilise or destabilise the natural balance are closely associated with self-management, and include level of confidence, being in control and ability to cope. These were influenced by: an understanding of stress and how to deal with it; a person's self-belief in their own ability; exercise as a way of keeping fit and managing stress; the value of relaxation and leisure activities; and finally connections with others.

The theoretical code, the achievement of equilibrium for health and well-being, was developed from the core category. Stress required to be balanced to achieve a state of equilibrium essential for optimum physical and mental health and well-being after TIA. Stress was a key influencing force and the presence or absence of stress can contribute to a situation of imbalance or balance. The impact or degree of stress can determine the level of imbalance or balance. Influencers played a role in the type and degree of stress perceived by the individual. Influencers aid the individual's ability to achieve a state of natural balance or equilibrium.

The theory generated was compared and contrasted to existing literature and theories to help achieve a reasonable level of abstraction; which is presented in Chapter 6: Discussion. The theory is directly related to the context and setting of the study and demonstrates conceptual and explanatory power, making it persuasive and helpful to create change. The participants' perceptions are important to clinical practice because they raise the possibility to influence the impact of perceived stress by empowering individuals to self-manage, learning new skills and build on existing positive well-being strategies. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. This is significant because it raises the opportunity to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke.

5.11 Summary

This chapter presented the findings from the study. These are an analysis of the data which sought to explore the perceptions of stress for people who have experienced a TIA. In particular, understand the relationship between perceived stress and TIA from the participants' perspective, how perceived stress affected health and well-being and what influenced perceived stress.

Overall, the findings revealed that stress was commonly experienced by the participants and that it is a significant feature throughout the figurative journey. Although it was not universally acknowledged as a potential contributing cause of the TIA, it did form a part of participants' lived experiences. The aim is to achieve a state of natural balance or equilibrium for optimum health and well-being. Stress is a key influencing force and the presence or absence of stress may contribute to a situation of imbalance or balance. The impact or degree of perceived stress can determine the level of imbalance or balance. Resources that influence stress can stabilise or destabilise the sense of balance. Equilibrium is an equal balance between the interdependent elements. The core category

that emerged from the study findings was: the equilibrium of health and well-being, in which energies are balanced creating a sense of health and well-being for the individual. Further theoretical analysis led to the emergence of the substantive theory: If perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being. These findings are important to clinical practice because they help make sense of the experience of stress for people who have experienced a TIA. It raises the possibility of influencing the impact of perceived stress by empowering individuals to self-manage, learning new skills and build on existing positive well-being strategies. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. This is significant because it raises the opportunity to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke.

This chapter presented the findings of the study. The first part of the chapter explored the figurative journey made by study participants, before, during and after the TIA; and the second part of the chapter presented the analysis of the categories that informed the core category and the discovery of the new substantive theory. The next chapter discusses the new substantive theory and the theoretical codes that shaped it which emerged from the analysis; then critiques the theory comparing it with current literature, theoretical frameworks and models. The chapter concludes with the limitations and strengths of the study; followed by the implications for clinical practice and recommendations for future research.

Chapter 6: Discussion

6.0 Introduction

This chapter discusses the new substantive theory which emerged from the research study, creating new knowledge in the management of TIA. The research aim and questions are conceptualised in the new substantive theory. The theory emerged through exploration and analysis of the perceptions of stress for people who have experienced a TIA. The theory proposes to effectively manage stress requires a state of equilibrium essential for optimal physical and mental health and well-being after TIA. The chapter begins by introducing the substantive theory and the theoretical codes that shaped and built it which emerged from the analysis; then critiques the theory comparing it with current literature, theoretical frameworks and models. Finally, the chapter goes onto to discuss the limitations and strengths of the study; followed by the implications for clinical practice and the opportunities for future research.

The literature was reviewed to develop the emerging theory by comparing and contrasting it with current literature and theories (see section 4.7). Further systematic searches of relevant databases were undertaken, specifically for theories relevant to the new substantive theory. Literature was searched using the new theory and by a combination of search terms including, transient ischaemic attack or transient ischemic attack, TIA, perceived stress, self-management, and achievement of equilibrium for health and well-being.

6.1 Substantive Theory

The research study has led to the emergence of a new substantive grounded theory:

> **If perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being.**

The substantive theory was developed within a specific setting and context of TIA management and is relevant to similar settings or groups. Previously, research into the relationship of perceived stress with TIA was lacking. Questions on how it affected an individual's health and well-being, and what

made a difference in influencing perceived stress, remained largely unanswered. The research has made a unique contribution by creating a new appreciation that perceived stress is commonly experienced at all stages: before, during and after the TIA. However, findings showed that not all participants shared the view that perceived stress had contributed to causing their TIA, it did form a part of participants' lived experiences.

The theory was generated by undertaking theoretical coding. To further develop the theory, the techniques of theoretical sampling, theoretical saturation and theoretical coding were applied (see Chapter 4: Research Methods). Theoretical codes comprised of the following: perceived stress, self-management, and achievement of equilibrium for health and well-being. The codes conceptualised how the theoretical concepts related to each other, thereby giving the theory its overall shape. The study's grounded theory approach enabled the building of the substantive theory enabling it to be presented as an integrated conceptual explanation. This new theory is important to clinical practice because it helps make sense of the experience of perceived stress in relation to a TIA for the individual. It is significant because it raises the opportunity to influence the level and impact of perceived stress to improve health and well-being for the individual and potentially reduce the risk of stroke.

Having introduced the new substantive grounded theory that emerged from the research study; the next section critiques the theory comparing current literature, theoretical frameworks and models.

6.2 The Theory and Current Literature

The new substantive theory that emerged conceptualises the relationship of perceived stress to TIA. Not surprisingly, given the complex nature of behaviour and the factors that might influence it, such as psychological, social and environmental, there are a large number of different theories of behaviour and behaviour change. A scoping review of theories of behaviour undertaken by Davis et al. (2015) identified a total of 82 theories from the literature. There was no overarching theory that matched the new substantive theory discovered in this study, although there were some conceptual similarities and parallels with sub-components of existing theories which are explored throughout the chapter. From the review of theories of behaviour two had more persuasive conceptual similarities; they were the Common-Sense Model of Self-Regulation (Leventhal et al. 2016) and The Health Belief Model (Janz and Becker 1984).

The Common-Sense Model of Self-Regulation (CSM; Leventhal et al. 2016) is a widely used theoretical framework. The model gives an understanding of which illness perceptions may be important at different stages of recovery and provides a framework to guide attempts to alter patient's perceptions. The CSM proposed that individuals interpret information about a current illness to create a representation of the illness. These illness representations include aspects of the illness such as its label (diagnosis of TIA), its time-course (duration of TIA symptoms and lasting effects), its effects on the person (impact) and its controllability (control). It explicates the processes by which people become aware of a health threat, navigate effective responses to the threat, formulate perceptions of the threat and potential treatment actions, create action plans for addressing the threat, and integrate continuous feedback on action plan efficacy and threat-progression (Leventhal et al. 2016). This is coherent with the findings in this study where individuals interpret current illness and the role of perceived stress to create a representation of the illness. Participants openly discussed the health threat or risk of another TIA or stroke and their navigated responses to that threat. The CSM model proposes that humans are natural problem solvers, whose thoughts are shaped by their upbringing, culture and experiences. It suggests that individuals process their thoughts about health and ill health via two separate but related pathways of cognitive and emotional beliefs to reach equilibrium, and feel comfortable in their beliefs about an illness. This is comparable to the substantive theory proposed in this study, which identifies two separate but related pathways can aid (stabilise) or hamper (destabilise) the sense of balance; and the ability to self-manage stress after TIA influences the ability to reach equilibrium. The CSM states that continual reappraisal of the cognitive domains and emotional beliefs provides an indication of whether the chosen coping procedures are helping to maintain a balance. This reappraisal process was evident in relation to the study's theory of achieving a natural balance between stabilisers, destabilisers through influencers. No specific studies have applied the CSM to TIA, however the model has been used to explore appraisal and behavioural factors that are potentially important in influencing witness behaviour in response to stroke (Dombrowski et al. 2012). There is currently a lack of research to understand the relationship between the CSM model and patients' self-management of illness.

The Health Belief Model (HBM; Janz and Becker 1984) is an example of a model of health behaviour that focusing on behavioural change at the individual level. The model suggests that decision-makers make a mental calculus about whether the benefits of a promoted behaviour change outweigh its practical and psychological costs or obstacles. Individuals conduct an internal assessment of the net benefits of changing their behaviour, and decide whether or not to act. The model identifies four

aspects of this assessment: perceived susceptibility to ill-health, such as the risk of TIA or stroke, perceived severity of ill-health, perceived benefits of behaviour change, and perceived barriers to taking action. The concept of self-efficacy, closely associated with self-management, was later recognised as an important component or factor. The specific course of action taken is determined by the beliefs one holds about the health threat and behaviour (Abraham and Sheeran 2005). This is coherent to the findings in this study where individual's beliefs one holds about the health threat or risk of another TIA or stroke and their navigated responses to that threat. The HBM framework has a set of core beliefs comprising of, benefits, costs, susceptibility, severity, cues to actions, perceived control a category in this study and health motivations, that are proposed to predict the likelihood of a health behaviour change. These core beliefs are influenced by demographic and psychological characteristics of the individuals. There have been no specific studies exploring the use of the HBM and TIA. However, the HBM has been applied to a variety of health behaviours associated with TIA, including smoking, alcohol consumption, diet and exercise and generally provide support for the model's predications (Abraham and Sheeran 2005). There is an opportunity to consider whether applying the model to perceived stress could support the achievement of optimum health and well-being after TIA.

In order to critique the substantive theory more fully, the theoretical codes which formed the concepts of the emergent theory will now be further explored. The theoretical codes comprised the following: perceived stress, self-management, and achievement of equilibrium for health and well-being. Each of these elements will be critiqued in more depth and compared with the published literature.

6.3 Perceived Stress

The findings showed that perceived stress was commonly experienced by participants at all stages of the figurative journey: before, during and after the TIA. Although it was not universally acknowledged by participants as a potential contributing cause of their TIA, it did form a part of their lived experiences. Perceived stress was seen as an influencing force and its presence and impact was a determining factor in achieving a natural balance of health and well-being for the individual.

Stress is a general term and has been defined as feeling irritable, filled with anxiety, nervousness or as having sleeping difficulties as a result of conditions at work or at home (Rosengren et al. 2004).

However, as discussed in the literature review (see section 2.2), alternative definitions of stress are used, with little agreement on what the term actually means or how it should be measured (Truelsen et al. 2003). This lack of agreement made it challenging when conducting research to determine what participants understood by the term stress and what it meant to them. Therefore, within the study the approach was taken that stress was self-determined and self-defined by the participants. However, this has presented challenges when interpreting data as participants used a range of interchangeable words and phrases when talking about stress, examples include distress, worry, pressure, and feeling anxious. They also referred to related life circumstances including: work, unemployment, bereavement, family illness, relationships and conflicts, being a carer or looking after children, mental health issues and finances. Participants spoke about a wide range of things which stress provoked from physiological responses, such as nose bleeds; psychological responses, such as anger; and finally social responses, such as social isolation. Giving participants the freedom to apply their own interpretation and meaning is aligned with the grounded theory ethos. However, by participants using their own definitions it may have affected the findings and theory in the study; for example, it may have led to broader definition that might otherwise be used. Participants spoke about a wide range of things which stress provoked from physiological responses, such as nose bleeds; psychological responses, such as anger; and finally social responses, such as social isolation. There were a number of challenges when analysing data as participants used a range of interchangeable words and phrases when talking about stress, examples include distress, worry, pressure, and feeling anxious. They also referred to stress related to other life circumstances including: work, unemployment, bereavement, family illness, relationships and conflicts, being a carer or looking after children, mental health issues and finances. This was similar to the review of published literature of psychological stressors with significant life events (see section 2.2). It raised the possibility of influencing the impact of perceived stress by empowering individuals to self-manage; however it is unclear whether an intervention to reduce stress would address the diversity of manifestations and further research would be required (see section 6.9).

When comparing the findings to the literature on the role of perceived stress in relation to TIA the extent of the literature is very limited; however there are some notable exceptions to be found. For example, Everson-Rose et al. (2014) examined data from 48 cases of TIA from a wider population-based cohort study in America and found higher levels of stress were associated with a significantly increased risk of TIA or stroke. In contrast, the CoPerSS mixed methods study (Booth et al. 2014) conducted in Scotland did not show perceived stress to be a significant factor in the occurrence of TIA, although it did report an increase in perceived stress following the diagnosis of TIA. The

evidence from these studies concur with the findings from this study that perceived stress was commonly experienced by patients. However, consistent with Booth et al. (2014) this study found perceived stress was not universally acknowledged as a cause of the TIA. In contrast to TIA, there has been increasing evidence of the role of stress in the risk of stroke (Booth et al. 2015). Results from a systematic review and meta-analysis of fourteen studies demonstrated that perceived stress was associated with increased risk of stroke.

The study findings showed that perceived stress was commonly experienced by the participants and it was a feature throughout their TIA journey. Participants conveyed the physical, practical and psychological consequences related to their TIA, and fear of the associated risk inherent in the TIA diagnosis. Although there is little evidence on how perceived stress affects physical and mental health following the TIA event, the findings concur with the growing body of literature reviewed from qualitative-based studies, which have explored the lived experience of TIA (Gibson and Watson 2012; Croot et al. 2014; Crowfoot et al. 2015). The study findings are similar to studies where people who have experienced a TIA have expressed a wide range of emotions, a loss of confidence, and uncertainty in light of increased stroke risk (Pendlebury et al. 2011; Croot et al. 2014; Stroke Association 2014). Gibson and Watson's (2012) grounded theory study explored the experiences of sixteen patients who had experienced a TIA. Themes that emerged similarly align with concepts from this study including, the perceived suddenness and shock involved, fear for the future, taking defensive action to avoid further problems and a changes perception of health. The current definitions conceptualise TIA as a transient event, however, there is an increasing body of evidence to show that those who experience a TIA may also experience depression, anxiety, cognitive problems, memory problems, fatigue and difficult coming to terms with the changed perception of health (Allen et al. 2002; Boter et al. 2004; Arts et al. 2008; Pendlebury et al. 2011; Moran et al. 2014). In line with other studies reviewed, this study found that having a TIA can permanently change people's perceptions of their physical and mental health and well-being.

The study's theory proposes that reducing the impact of perceived stress is valuable to the individual's health. This is comparable to reviewed literature which indicates the importance of addressing all the individual's potential risk factors after TIA, including psychosocial risk factors such as stress (Muir 2009; Egido et al. 2012; O'Donnell et al. 2010; Booth et al. 2015). However, until now stress as a risk factor seems to have been largely neglected in the literature and current health care practice. This is in consistent with the study findings which found patients were offered limited tailored information and no specific interventions to address stress. There is no clear clinical

message about the role of perceived stress and TIA, and a lack of evidence around the potential for stress modification interventions in clinical practice (Lawrence et al. 2011; Tan and Morgan 2015). Preventive measures have largely focused on medical and surgical interventions (Rothwell et al. 2006); however the literature reviewed now suggests targeted therapeutic interventions have the potential to reduce the risk of stroke. Therefore the identification of effective strategies is needed to help individuals reduce perceived stress (Lawrence et al. 2011). It is proposed there are benefits to be derived from multimodal secondary prevention interventions by combining medical therapies with interventions designed to support patients to make changes to lifestyle behaviours may improve health outcomes (Lawrence et al. 2015; Ovbiagele et al. 2004; Joubert et al. 2009). This study concurs and adds to the existing literature by identifying the actions that patients take to influence perceived stress and whether they have made a difference to their health and well-being. The emergence of the main categories of stabilisers, destabilisers and influencers, which together collectively underpin the theory and theoretical codes of self-management (see section 6.4) and the achievement of equilibrium for health and well-being (see section 6.5) can be used to inform the design of interventions to help patients make changes to lifestyle behaviours, improve physical and mental health and well-being and potentially reduce the risk of stroke.

A significant proportion of the broader research into stress has been focused on the hypothesised relationship between stress and illness (Rice 2012). The associated theories of stress that have emerged can be arranged into two main groupings: approaches based on physiology of stress (Selye 1936) and approaches to psychological stress developed in the field of cognitive psychology (Lazarus 1966). The physiology-based model of Selye (1936) has been criticised as lacking a connection between the body and mind, making it less compatible with the nursing view of understanding the person as a whole (Werner 1993; Rice 2012). Therefore, nursing has predominately moved towards using theories that adopt a more holistic perspective. This aligns with this study which took a similar view and is more closely associated with the psychological stress theory (Lazarus 1966) than the physiological stress response (Selye 1936).

Since its first presentation Lazarus's (1966) psychological stress theory has undergone several revisions (Krohne 2002). According to the theory, stress is a two-way process; it involves the production of stressors by the environment, and the response of an individual subjected to these stressors. His conception regarding stress led to the theory of cognitive appraisal. Cognitive appraisal has two central concepts: appraisal and coping. A person's appraisal can be the recognition that a situation is a danger to their well-being, helpful or irrelevant; their coping determines what the

person will do, and involves their perception of their options and resources (Carpenter 2016). There are parallels to the study's findings around the concepts of appraisal and coping. The first concept 'appraisal' refers to the individual's evaluation of the TIA event and its significance for their well-being. From the study findings a critical time of appraisal was in the immediate aftermath of the TIA when there was a sense of 'doubt' and uncertainty; appraising was important in making sense of what had happened and an opportunity for early intervention. The second concept 'coping' refers to the individual's efforts in thought and action to manage demands and conflicts. This concurs with the study findings that the participant's own ability to cope or not with perceived stress can aid (stabilise) coping or hamper (destabilise) the sense of coping. Therefore, the substantive theory is comparable to Lazarus's (1966) theory; by the production of stressors associated with the TIA, and the response of an individual subjected to these stressors can influence their ability to achieve a state of equilibrium and achievement of health and well-being.

Lazarus and Folkman (1984) identify three types of stress within the psychological stress theory: harm, threat and challenge. Harm as a type of stress refers to damage that has happened. Identifying this type of stress concurs with the findings in relation to recognition of TIA and subsequent action taken. In this study, the response by participants to 'harm' associated with the TIA was found to vary greatly, with some taking immediate action and others ignoring the symptoms. Threat is the anticipation of harm that may be immediate. This was demonstrated as concern over the TIA event and the fear of it leading to a full-blown stroke, and the possible disability or death. 'Challenge' was identified in the study and resulted from the person's feelings of confidence and mastery. These three types of stress are identified within the psychological stress theory literature (Lazarus and Folkman 1984) similarly related to participants' experience of adapting to manage stress after the TIA and make changes that would support health and well-being.

The conceptualisation of stress as a response has contributed to the development of a number of nursing theories and models of nursing practice (Rice 2012). One of the more well-known models of nursing is Roy's Adaptation Model (Roy 1984). The model is underpinned by the notion of adaptation, and the ability of nursing to facilitate a person's adaptation or coping with stress. It places emphasis on the person's own coping abilities to achieve health. The output is either adaptive or maladaptive coping responses; effective coping results in health or ineffective coping results in illness. A review of literature related to the model demonstrates alignment with the substantive theory in this study and the importance of achieving a natural balance to support health and well-being (Shosha and Al Kalaldeh 2012). The study findings detail both adaptive and maladaptive

behaviours linked to lifestyle risk factors that emerged due to the different perceptions of their relationship to health and the need to make changes. Evaluation of Roy's model in terms of its level of theory development has been shown to be appropriately meaningful for nursing and useful for guiding nursing practice (Rice 2012). The model has shown a robust theoretical and conceptual framework, especially in studies concerned with the consequences of some medical treatments (Shosha and Al Kalaldeh 2012). Roy's arrangement of concepts is logical, but the clarity of some terms and concepts is inadequate; this may decrease the clarity of the model when applied in any specialised area of practice such as the management of TIA. The model is also fairly complex with numerous components and proposed relationships and is probably more suited to an inpatient care setting rather than an outpatient clinical setting, thus reducing its applicability in relation to TIA. Not surprisingly no known studies have used Roy's model to guide the management of TIA or strategies to reduce the risk of stroke.

In summary, the findings for the research study revealed perceived stress was commonly experienced by participants and was a significant feature throughout the TIA journey. Evidence of the role of perceived stress in relation to TIA is at an early stage of emergence in the literature, but positively indicates concurrence with the study findings. This study's new theory makes a unique contribution to clinical practice because it helps make sense of the experience of stress for people who have experienced a TIA. Having explored perceived stress, the next section explores the next theoretical code of the substantive grounded theory: self-management.

6.4 Self-Management

The next theoretical code linked to the substantive theory was self-management. Grounded in the findings, the theory proposes a self-management approach as a way to address perceived stress after a TIA to enable the individual to achieve a state of equilibrium to support their own health and well-being.

This study found the person's own ability to cope or not with stress can aid (stabilise) or hamper (destabilise) the sense of balance of health and well-being. Key concepts that were found to either stabilise or destabilise the natural balance are closely associated with the subsequent review of the literature on self-management and include: confidence, being in control, and coping (Jones et al. 2009; Joice et al. 2012). Study findings showed these were influenced by: an understanding of stress

and how to deal with it; a person's self-belief in their own ability; exercise and relaxation as ways of managing stress; and connections with others. These elements are also fundamental components of stroke-specific self-management programmes currently used within clinical practice as detailed in the literature (Jones et al. 2009; Joice et al. 2012).

Self-management comprises therapeutic management, achieving positive health behaviours and managing emotional consequences (Corbin and Strauss 1988). There are more than 30 theories associated with behaviour change enabling self-management (Michie et al. 2005). These theories have identified attitudes, beliefs and constructs that can be targeted to effect behaviour change. One of the theories that self-management is most closely associated with, is social cognitive theory (Bandura 1997). The main construct from social cognitive theory is self-efficacy: individuals perceived confidence in their ability to carry out a behaviour or action. Self-efficacy and being able to take personal responsibility for one's own health and well-being concurs with the study findings through participants' expressions of self-belief and adopting positive attitudes and a more confident outlook. Self-efficacy is characterised by achieving success (mastery); shared (vicarious) experiences of other people; expressed positive belief of involved parties (verbal persuasion); and feedback (both emotional and physical) (Jones. 2006). Self-management involves a combination of information, support and education about behaviour change. The participants in this study used a combination of approaches including knowledge, self-belief, exercise, relaxation and connections; by using a combination of these components optimises the person's ability to effectively self-manage (Barlow et al. 2002). Self-management complements the traditional patient education experienced by study participants. Whereas traditional patient education offers information and technical skills, self-management education teaches problem-solving. Evidence from research trials suggests that programmes teaching self-management skills are more effective than information-only patient education in improving outcomes (Bodenheimer et al. 2002). However, there is currently limited evidence of how to best support the implementation of self-management support interventions within healthcare and in TIA management in particular.

The current review of literature indicates that self-management programmes may benefit people with stroke; although the evidence is less clear for people who have experienced a TIA. There is evidence for related modes of delivery and examples of tailoring content to the target group. One example of this are studies managing risk factors after TIA as part of a cardiac model of rehabilitation and prevention. The results suggest that standard cardiac rehabilitation programmes are a feasible and effective means of both improving lifestyle and reducing the risk of future events for patients

after TIA (Gorecka et al. 2018; Kirk et al. 2013). This approach of adapting existing structured rehabilitation programmes for other conditions to meet the needs of people after they have experienced TIA has been advocated for (Stroke Association 2014). The benefits of such programmes lie in improved quality of life and self-efficacy. However, it has been advised that it would be beneficial for further research to be focused on identifying key features of effective self-management programmes and assessing their cost-effectiveness (Fryer et al. 2016). Kidd et al. (2015) explored a stroke self-management intervention that could be tailored to stroke survivors' self-management needs, goals and levels of activation. The evaluation showed the self-management intervention was perceived as feasible and acceptable although further work is needed to identify how to effectively embed it into routine clinical practice. The challenge of embedding models of self-management in practice forms the focus of much ongoing evaluation (McKenna et al. 2013). However, given the challenges of reduced resources in practice, health care professionals are in a prime position to integrate them into their practice, with a view to supporting individuals to self-manage perceived stress following a TIA (Lawrence 2010).

In this study the theory proposes a self-management approach as a way to address perceived stress after a TIA; however, current literature relevant to TIA is lacking and it is worthy of further investigation with the associated implications for the prevention of stroke (Booth et al. 2015; Lawrence et al. 2011; Tan and Morgan 2015). Resource theories of stress are concerned with the 'resources' that preserve well-being in the face of stressful encounters (Rice 2012). This is similar to the findings from the study which identified influencers as comprising 'resources' that preserved the individual's sense of health and well-being. The study found influencers could impact on perceived stress by influencing stabilising and destabilising factors. There is a consistency between the influencer concepts that emerged and self-management. The literature describes self-management as a combination of information provision, support and education about behaviour change (influencers: knowledge, exercise and relaxation), while acknowledging individuals' beliefs, attitudes and cognitions (influencer: self-belief), their social networks and the health care professionals who care for them (influencer: connections) (Joice et al. 2012). Some participants expressed a change in thoughts and behaviours from before the TIA to after with a shift of focus on the important things in their lives; making positive lifestyle choices and changes; proactive approaches to stress; and using self-management techniques to manage stress.

In summary, the key concepts that were found to either stabilise or destabilise the natural balance of stress are closely associated with self-management and include: levels of confidence, being in

control, and the ability to cope. This new theory is important to clinical practice because it proposes self-management to influence the impact of perceived stress by empowering individuals to self-manage, learning new skills and build on existing strategies. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. Having explored self-management, the next section explores the next theoretical code of the substantive grounded theory: achievement of equilibrium for health and well-being.

6.5 Achievement of Equilibrium for Health and Well-being

The evidence presented in this thesis adds to a growing body of evidence that having a TIA changes people's perception of their health, despite the transience of the symptoms. The substantive theory proposes that, if perceived stress can be effectively self-managed after a TIA, a state of natural balance or equilibrium for health and well-being will be achieved. Other studies have reported that some people suffer physical and psychological consequences as a result of this 'transient' event and the knowledge of their subsequently increased stroke risk (Gibson and Watkins 2012; Croot et al. 2014). The concept of achievement of equilibrium for health and well-being has parallels with the concept of 'everyday health competence' (Horlick-Jones 2010). Horlick-Jones (2010) suggests that people suffer damage to their 'everyday health competence' following a negative unanticipated health event. Everyday health competence was described as the ability to review bodily sensations and to react in an appropriate manner. Thus, although the TIA is transient in nature, the evidence from this study and other published evidence suggest that it has a significant and enduring impact. Horlick-Jones (2010) proposes that, in parallel with the substantive theory, effective strategies such as self-management will aid the restoration of everyday health competence.

The concept of equilibrium of health and wellbeing emerged to formulate the core category: the equilibrium of health and well-being after TIA for the individual. To effectively manage stress requires a natural balance; thereby achieving equilibrium may contribute to health and well-being for people after a TIA. The value of the concept of equilibrium of health and wellbeing after TIA in relation to managing stress requires further research. Stress as perceived by the individual disrupted the natural balance essential for optimum physical and mental health and well-being. Perceived stress was commonly experienced by the participants and it was found to be a feature in the various stages of the figurative journey of TIA and formed part of their lived experiences. However, for study participants, achievement of health and well-being after a TIA was important as it also meant being

free of further events. A significant stress was the fear of further TIA events, a stroke or even death. However, for some they also viewed it as a positive as the TIA event that warned of their stroke risk and enabled them to proactively manage the consequences and change health behaviours.

The findings from this study revealed that influencers (Figure 3) aid the restoration and the achievement of equilibrium. Influencers played a role in the type and degree of stress perceived by the individual and therefore has an effect on the individual's ability to achieve a state of natural balance or equilibrium. One of the influencer concepts that emerged was knowledge. Knowledge was viewed as information and skills acquired through experience or education. Hoffmann et al. (2004) found that, in an evaluation of current practice in the provision of written information, the most frequently requested topic by both patients and carers was on preventing further strokes; and specifically on the risk factors for stroke. A systematic review by Smith et al. (2008) found a combination of verbal and written information may be more effective than either format alone, and information individualised to the patient was more beneficial than general information. However, it has been reported some people who sought to proactively manage the consequences of their TIA found it difficult to obtain the information and support needed (Croot et al. 2014). It is recommended in the management of patients with a TIA that tailored information should be offered to meet the needs of individual patients and be available in a variety of accessible formats (Scottish Intercollegiate Guidelines Network 2008). The study findings concur that knowledge could improve understanding of stress and enable participants to make more informed lifestyle choices and understand the health outcomes. Although the best way to deliver information is still not clear, the literature suggests that strategies which actively involve patients and caregivers should be used in routine practice (Smith et al. 2008).

Another of the influencer concepts that emerged from the study was self-belief. Self-belief was associated with faith that one can rely on oneself, and take personal responsibility for one's own health. This was demonstrated by participant approaches such as adopting a 'can do' attitude and having a more confident outlook. As discussed in the previous section, self-efficacy is the confidence to carry out behaviour necessary to reach a desired goal. It forms a main construct from social cognitive theory (Bandura 1997) underpinning some self-management approaches. High levels of fear have been shown to trigger maladaptive responses such as avoidance or denial (Ruiter et al. 2001). This is particularly the case when the person does not have a strong self-belief in their ability to change their lifestyle behaviours, and when they do not believe that these changes will reduce their risk of health threat (Ruiter et al. 2001). An observational study of sixty patients in a population

of people at risk of stroke compared simple advice or motivational interviewing with behavioural change, against a control group. The model focused on behavioural change with self-efficacy a key component where a patient develops an 'I can do this' attitude. Success was achieved when patients chose which risk factor to focus on, when milestones were set, and when one change was made at a time (Miller and Spilker 2003). Therefore, if patients focused on perceived stress potentially a state of equilibrium for optimum health and well-being is more likely to be achieved.

The next influencer concepts that emerged were exercise and relaxation. The benefits of regular exercise have both preventive and therapeutic effects on many chronic conditions, such as heart disease, high blood pressure and stroke (Scottish Government 2014). A meta-analysis of epidemiological data from large observational studies looking at primary prevention (not stroke-specific) indicated that physical activity may reduce the risk of stroke (Wendel-Vos et al. 2004). It is an aspect of lifestyle that participants in the study were aware of and the majority at risk of recurrent stroke could modify. Accompanying exercise was relaxation as an influencer concept in the findings. The study findings showed that being able to relax, unwind and de-stress had valuable health and well-being effects. It has been suggested that by learning relaxation management techniques you can improve your overall health as well as your odds of living a disease-free life (Rice 2012). There is a lack of specific studies exploring relaxation and TIA, however there is some evidence in relation to the related concept of mindfulness (Lawrence et al. 2013). Mindfulness-based interventions are structured group-based self-management programmes with potential to help people cope better with physical, psychological, or emotional distress. The literature review demonstrated that people who experience a TIA may derive a range of benefits across a range of psychological, physiological and psychosocial outcomes, however, further research is required.

The final influencer concepts that emerged through analyses were connections. Connections with others are a fundamental requirement for mental health and well-being (Scottish Intercollegiate Guidelines Network 2010). From the findings, connections were found in the form of relationships with significant others such as a spouse or partner, family member or friend, or wider community, such as being a member of a church congregation. The study also revealed how relationships could be negatively affected in light of a TIA. This finding is comparable with other qualitative studies which reported increased anxiety in others, particularly spouses, other family members and work colleagues (Croot et al. 2014). Consistent with the study findings, the literature has also suggested the powerful nature of influence exerted by family members on the patient's health and well-being behaviours within the family context (Lawrence et al. 2010; Gibson and Watkins. 2012).

The theory proposes that achieving equilibrium will result in health and well-being for people after a TIA. For study participants, achievement of health and well-being after a TIA also meant being free of further events. A significant stress was the fear of further TIA events, a stroke or even death. This fear is substantiated by the evidence which shows that, of the people who experience a TIA as many as 20% will go on to have a stroke which can result in disability or death (Johnston 2007). Having a TIA can negatively impact the individual's perception of their health and well-being, becoming aware of their stroke risk. Evidence has shown that high levels of fear can trigger maladaptive responses such as avoidance or denial (Ruiter et al. 2001). However, similar to existing literature, some also viewed it as a positive event that warned of their stroke risk and enabled them to proactively manage the consequences of their TIA and change health behaviours (Gibson and Watkins 2012; Croot et al. 2014). It also provides health care professionals with a window of opportunity to address psychosocial risk factors, such as stress, with the individual. This can be through using self-management interventions in the achievement of equilibrium for health and well-being for people who experience a TIA and could potentially reduce their risk of stroke although further research is required (see section 6.9).

Previous research into the relationship of perceived stress with TIA was lacking. Questions on how it affected an individual's health and well-being, and what made a difference in influencing perceived stress were, largely unanswered. This research study has made a unique contribution to clinical practice because it helps make sense of the experience of perceived stress in relation to a TIA for the individual. It is significant because it raises the opportunity to influence the level and impact of perceived stress to improve health and well-being for the individual and potentially reduce the risk of stroke. Having explored the theoretical codes of the substantive theory in more depth around the current literature, the next sections discuss the limitations and strengths of the study, followed by the implications for clinical practice and opportunities for future research.

6.6 Limitations of the Study

This research study had a number of limitations. The study used a small sample size of people who had experienced a TIA. The aim in grounded theory is to continue sampling until theoretical saturation is achieved (see section 4.5.5). Guest et al. (2006) proposed that a sample size of twelve is satisfactory when exploring individuals' experiences in a relatively homogenous sample. Following thirteen participant interviews being conducted, compared and analysed, a judgement was made

that the main categories showed depth and variation in terms of their development and no new relevant concepts were found that were important to the developing theory. The study reached theoretical saturation based on increasing repetition, decreasing heterogeneity, and the explanatory power of the emerging theory. So although the sample size was smaller it was appropriate to the methodological design of grounded theory and to answer the research questions. The depth and quality of the findings demonstrated a valuable insight into the experience of perceived stress and TIA.

The length of time from the TIA event to the data collection interview is a limitation. The study was reliant on the recall of the participants which could have been affected by the time elapsed, especially for those at the furthest time since the TIA event. There were a number of reasons for this variation in length of time from the TIA event to the participant's interview. Firstly, was that the researcher undertook the clinical doctorate study on a part-time basis while working full-time in clinical practice; this put practical constraints on how quickly the interviews could be undertaken. Secondly, the participants were located throughout the country, therefore some interviews involved careful planning to allow time to travel. Finally, another reason was that the grounded theory methodology requires the simultaneous analysis and comparison of data while undertaking data collection. Again due to the part-time nature of the research, the time to transcribe interviews, and then to analyse them in order to determine the evolving theoretical focus of subsequent interviews, resulted in delays in undertaking data collection. However, the time from the TIA event to the data collection interview was also a potential strength (see section 6.7).

Another limitation of the study was there is no definitive diagnosis for TIA, although all the study participants were given a 'working' diagnosis of TIA by a stroke physician. This meant that some participants may have been misdiagnosed and not have had a TIA. The study did not capture patients who may have had a TIA but did not seek medical attention, and those who sought medical attention from their GP and were not referred for specialist assessment or chose not to attend. Therefore the study may not reflect the experience of all TIA patients. There was also a broad variation in the clinical presentation of the study participants in relation to medical history, presentation and symptoms, demographics and social circumstances. However, this unique contribution of the individual added to the depth and richness of the data.

The participants were asked to talk about perceived stress from their own perspective and understanding. As stress was self-reported, variation in interpretation may have occurred. However,

not imposing a definition of what was meant by perceived stress aligned with the methodology of grounded theory, giving participants the freedom to openly explore and express their experiences from their own perspective.

The final limitation was the potential for researcher bias. The researcher has an in-depth clinical knowledge of the condition TIA, its treatment and management. He was also undertaking clinical practice in the field of TIA management at the time. However, the researcher's own place of work was not included in the study. The researcher's background could have resulted in bias in relation to conducting of the interviews; however, this was monitored closely by the researcher's supervisors who read through the interview transcripts and advised in relation to approach as data were simultaneously collected. The researcher aimed to prevent bias influencing the research process through theoretical sensitivity (see section 4.5.1) and reflexivity (see section 4.8) which required critical self-reflection of the research experience. The study was undertaken to add to the field of clinical practice and so it could be argued that having knowledge of the area of practice enabled a deeper understanding of a complex phenomenon and for the clinical relevance to be realised.

6.7 Strengths of the Study

The study had a number of strengths in relation to the area of research and the grounded theory methodological approach undertaken.

A strength of the study is that it led to the uncovering of new knowledge for clinical practice in TIA management. There was previously a lack of understanding of the role of perceived stress related to TIA, as it had been a largely unexplored territory. The study has made a unique contribution by bringing a new appreciation that perceived stress was commonly experienced by the participants at all stages. Stress was found to feature before, during and after the TIA. The study revealed that participants did not share the view that stress had contributed to causing the TIA; however perceived stress was part of most participants' lived experiences impacting on their health and well-being. The new knowledge uncovered by the study has a number of valuable implications for clinical practice (see section 6.8) and future research (see section 6.9).

The grounded theory methodological was the best methodological approach to address the research questions and was a strength of the study (Glaser and Strauss 1967). There are very few qualitative-

based studies of perceived stress and TIA; therefore the current evidence lacked a depth of meaning from people who had experienced a TIA. This study addressed that deficit by adopting a qualitative methodological approach which allowed for an open exploration of the participants' experiences. Each participant's contribution was unique to those individuals and all perceptions were equally valid in contributing to the study findings. The grounded theory approach enabled exploration of new meanings of the role of stress in relation to TIA for participants and led to evolution of the core category and the emergence of a new substantive theory.

The sample of participants who had all experienced a TIA was also a strength of the study. A broad purposive sample was used which was diverse in: TIA presentation, health status, gender, age and geographical location. There were no preconceptions in relation to whether perceived stress was a risk factor or not in relation to the participant's experience of TIA. The iterative theoretical sampling that followed allowed further exploration of concepts that were emerging.

A final strength of the study was that data collection occurred around 12 months from the participants' TIA event. This allowed participants to reflect on and discuss the full experiential journey of the TIA; from whether stress preceded the TIA event or not, right through to the ongoing challenge of dealing with stress and the associated effects on their health and well-being.

Having explored the limitations and strengths of the research study, the next sections now considers implications for clinical practice and research going forward.

6.8 Implications for Clinical Practice

This section explores the new contribution of the research to the field of TIA management, and how that contribution may influence practice in the clinical area. The main benefit for clinical practice is that the study contributes to improving understanding by health care professionals of the perceptions of stress for people who have experienced a TIA. It raises awareness that perceived stress is commonly experienced by participants at all stages of the figurative journey: before, during and after the TIA. Although it was not universally acknowledged by participants as a potential contributing cause of their TIA, it did form a part of their everyday experiences.

The study affirms the importance of considering psychosocial factors, such as stress, for those who experience a TIA. Traditionally, addressing lifestyle factors seemed to come secondary to medical management in TIA. This study improves awareness of the importance of addressing psychosocial risk factors, such as stress. The study highlights the need for health care professionals to take cognisance of the role of perceived stress as an influencing force in achieving health and well-being; and the person's ability to cope or not with stress which can aid (stabilise) or hamper (destabilise) the individual's health and well-being. Key concepts that were found to either stabilise or destabilise the natural balance of stress are closely associated with self-management and include: levels of confidence, being in control, and the ability to cope. In outpatient clinic settings it is important for conversations to be had between health care professionals and patients about stress in their lives, the impact of stress on their health and well-being, and the potential to reduce their risk of stroke. Through these conversations health care professionals could have an influence on the patients understanding of stress and how to deal with it. They could discuss exercise as a way of keeping fit and managing stress; the value of relaxation and leisure activities; and the importance of connections with others. Health care professionals could supplement these conversations with the provision of information resources in an accessible format suitable for the individual, or alternatively, refer patients to reliable sources to find out further information. It also creates an opportunity for health care professionals to offer appropriate and timely interventions; such as, accessing local community-based support including generic classes for relaxation, exercise and stress management. There are also a wide range of generic self-management resources that can enable and empower people to manage their own stress, learning new skills and build on existing positive well-being strategies to cope. Support and follow-up by health care professionals is important to ensure the optimum chances of making sustainable change, as managing stress effectively was an ongoing challenge for those who experienced a TIA. This may require training to educate health care professionals to improve understanding and skills in relation to stress and self-management. There may also need to be consideration given to alleviate potential constraints and barriers in relation to health care services and resources; and the roles played by health care professionals to ensure the effective management of psychosocial factors, such as stress.

6.9 Future Research

The study proposes a number of areas where current evidence is limited, providing a number of opportunities for further research into perceptions of stress by people who have experienced a TIA.

A natural follow-on study would be to undertake further research into the new substantive theory: if perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being. A follow-on study could explore further if perceived stress can be effectively self-managed after TIA; and how an individual can achieve a state of natural balance or equilibrium for health and well-being. Further exploration will either build or refute the conceptual ideas that the substantive theory represents.

Studying specific sample groupings would enable a wider exploration of perception of stress; particularly in relation to variation in demographics such as age, gender, ethnicity, and social deprivation. There could also be exploration of different health care systems and sociocultural contexts. An understanding of the physiological and psychological mechanisms by which stress contributes to increased potential risk of TIA need to be elucidated. Also, the associated modification of stress as a risk factor for TIA or stroke is needed, particularly given the ageing population and increasing burden of stroke.

Further research would be valuable in determining the most effective ways for assessing and managing stress after TIA. Interventions need to be developed and evaluated to determine their effectiveness at reducing stress for the individual. Stress was related to other life circumstances including: work, unemployment, bereavement, family illness, relationships and conflicts, being a carer or looking after children, mental health issues and finances. Further research is needed to determine whether an intervention to reduce stress would address the diversity of manifestations. Specifically, one could examine whether stress, when effectively self-managed after TIA, reduces the individual's risk of stroke. There may also be specific groups of patients at higher risk of stroke that potentially could benefit from more intensive preventive efforts.

6.10 Summary

This chapter discussed the new substantive theory which emerged from the research study, creating new knowledge in the clinical practice of TIA management. The theory emerged through the exploration of perceptions of stress for people who had experienced a TIA. The chapter began by introducing the substantive theory and the theoretical codes that shaped it; then critiqued the theory using current literature, theoretical frameworks and models. Finally, the chapter discussed

the limitations and strengths of the research study; followed by the implications for clinical practice and the opportunities for future research.

6.11 Conclusion

Stress was a known risk factor for stroke, but there was a lack of understanding of the role stress plays in TIA. TIA is a warning sign of stroke; however effective management of risk factors can reduce the threat of stroke for the individual. The study explored the perceptions of stress for people who have experienced a TIA which led to new knowledge to inform clinical practice in relation to TIA management.

The research addressed the following research questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?

The research made sense of perceptions of stress for people who have experienced a TIA. The findings bring a new appreciation that perceived stress was commonly experienced by participants and is a significant feature throughout the figurative journey: before, during and after the TIA.

2. How has perceived stress affected the patients' physical and mental health and well-being?

Although it was not universally acknowledged as a potential contributing cause of the TIA, stress formed part of participants' lived experiences. Stress was a key influencing force and the presence or absence of stress contributed to a situation of imbalance or balance of physical and mental health and well-being.

3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

Factors or resources that influenced stress can stabilise or destabilise the sense of balance. Influencers that emerged were: knowledge and self-belief, relaxation and exercise, and connections. Equilibrium is the achievement of an equal balance between the interdependent elements essential for optimum physical and mental health and well-being.

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The core category that emerged from the study findings was: the equilibrium of health and well-being after TIA for the individual. Further theoretical analysis led to the discovery of the new substantive theory: if perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being. The theory is directly related to the context and setting of the study and makes a unique contribution. It has explanatory power, making it persuasive and helpful to create change to advance clinical practice.

These findings are important to clinical practice because they help make sense of the experience of stress for people who have experienced a TIA. It raises the possibility of influencing the impact of perceived stress by empowering individuals to self-manage, learning new skills and building on existing positive well-being strategies. It also provides health care professionals with a rationale for including attention to stress as a component of care provided to patients with TIA. This is significant to clinical practice because it raises the opportunity to offer appropriate and timely interventions to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke. This thesis resulted in the discovery of new knowledge and a new theory that contributes to the advancement of TIA management in clinical practice.

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Appendix 1: Memorandum of Understanding

Memorandum of Understanding

This memorandum of understanding details the links between the 'Contribution of Perceived Stress in Stroke' (COPerSS) research study being led by Dr Jo Booth, Chief Investigator and Reader at Glasgow Caledonian University; and the 'Patients who have had a transient ischaemic attack or minor stroke; a grounded theory study exploring the role of perceived stress' being undertaken as NURPD5 research study of the Doctor of Nursing by Campbell Chalmers, Clinical Doctorate Student, University of Stirling.

Points of understanding:

1. The two research studies are working collaboratively together but are deemed independent of each other.

2. The COPerSS study will formally notify the West of Scotland Research Ethics Service of the involvement of Campbell Chalmers as part of his Doctor of Nursing, University of Stirling; and undertake a substantive amendment.

3. The COPerSS study will formally notify the research and development departments from the five different NHS boards of the involvement of Campbell Chalmers as part of his Doctor of Nursing, University of Stirling; and request letters of access for research.

4. The NURPD 5 study will operate under the ethical approval and subsequent substantive amendment granted to the COPerSS study by the West of Scotland Research Ethics Service; and the research and development management approvals obtained from the five different NHS boards involved.

5. The approved patient information sheet (modified as part of the substantive amendment) and the consent form will be utlised by the NURPD 5 study.

6. The interview schedule will retain core questions agreed between both studies; however this will be developed in line with the grounded theory methodology for NURPD5 study.

7. The NURPD 5 study will have access to the contact details of patients who have voluntarily expressed a willingness to help further by voluntarily providing their contact details; initially 20 patients with further access as required.

8. The timescale for undertaking the initial 20 interviews by the NURPD 5 study will be mutually agreed between both studies.

9. The raw data (interview transcripts) from the initial 20 interviews by the NURPD 5 study will be shared with the COPerSS study.

10. The intellectual property from the analysis of the combined interviews (20 by the NURPD 5 study and 20 undertaken by the COPerSS study) for use in the research report and publication in a relevant peer-reviewed journal(s) will remain with Jo Booth and the COPerSS research team.

11. The intellectual property from the analysis of the 20 interviews (plus potentially additional interviews) undertaken by Campbell Chalmers for the NURPD 5 study for use in the doctorate thesis and publication in a relevant peer-reviewed journal(s) will remain with the University of Stirling.

12. Full acknowledgement of the involvement of the other party will be given in reports, publications and other outputs as appropriate.

Sign/Date
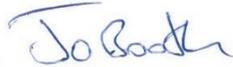
Dr Jo Booth   13/12/12
Chief Investigator/Reader
Glasgow Caledonian University

Sign/Date

Mr Campbell Chalmers   13/12/12
Clinical Doctorate Student
University of Stirling

Appendix 2: Participant Information Sheet

Participant Information Sheet

The Contribution of Perceived Stress in Stroke

You are being invited to take part in a research study which forms part of a Doctor of Nursing educational course. Before deciding to take part or not, please take time to read this information carefully. Talk to others if you wish, before deciding. If anything is unclear, or you would like more information please contact members of the research team, whose contact details are below.

What is the purpose of the study?
The purpose of the study is to find out about stress, what people feel about it and whether they think it plays a part in their illness or medical condition.

Why have I been chosen?
You are being asked to take part because you attended an outpatient clinic for TIA (transient ischaemic attack) / stroke and you completed a questionnaire about stress at the clinic. You provided your contact details on the questionnaire to indicate you might be willing to help us further and talk to a researcher about your experiences of stress.

Do I have to take part?
No. It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and will be asked to sign a consent form. You are free to withdraw at any time and don't need to give a reason If you decide not to take part, this will not affect the standard of care you receive.

What will happen to me if I take part?
If you decide to take part, a researcher will telephone you to arrange to meet with you, in your home or another place you choose. You will be asked questions about your experiences of stress and your medical condition. It will take approximately half an hour. We would like to tape record your answers, with your permission.
The researcher is an experienced stroke nurse and also a student at the University of Stirling. The information you provide during your interview will be analysed by him as part of his learning for his Doctor of Nursing education programme. However your interview will also be analysed separately by the research team as part of the main research project.

What are the possible benefits of taking part?
This study will not help you directly, but the information you give might help improve treatment for stress in the future.

Will my taking part in the study be kept confidential?
Yes. All information you provide will be kept strictly confidential and will be stored securely. Your anonymous interviews will be stored on an encrypted, safe laptop by the student researcher and on a password protected computer at Glasgow Caledonian University. Your contact details will be stored separately to your interviews, in a locked filing cabinet and will be destroyed at the end of the

Participant information sheet – interviews -CC.
Version 2, Sep 20th 2012

study. The procedures for handling, processing, storage and destruction of data will comply with the Data Protection Act 1998.

What will happen to the results of the research study?
The results of the research will be presented in a thesis by the student researcher. They will also be published in academic journals and a report sent to the funders. You will not be identified in any report or publication.

Who is organising and funding the research?
The research is being organised by Glasgow Caledonian University and is funded by the Queens Nursing Institute for Scotland.

Who has reviewed the study?
The West of Scotland Research Ethics Committee has reviewed the study to ensure that it complies with ethical guidelines for research.

Contact Details
Any concerns you may have about perceived stress should be discussed with the staff in the clinic, your GP or practice nurse. Further advice can also be obtained from:

Chest Heart and Stroke Scotland (CHSS) Advice Line on **0845 077 6000**

If you would like more information about this research or wish to discuss it further before making a decision, please contact Dr Joanne Booth, Reader, telephone number **0141 331 8635** or
Dr Maggie Lawrence, Senior Research Fellow, tel number **0141 331 8863**.

They can both be contacted at the address below:
Institute of Applied Health Research, Glasgow Caledonian University,
Cowcaddens Road,
Glasgow G4 0BA

Thank you for taking the time to read this information sheet

Appendix 3: Consent Form

CONSENT FORM

Title of Project: **The Contribution of Perceived Stress in Stroke**

Name of Researcher: ………………………………………

Please initial box

1. I confirm that I have read and understand the information
   sheet dated .... (version ....) for the
   above study. I have had the opportunity to consider the
   information, ask questions and have had these answered
   satisfactorily.

2. I understand that my participation is voluntary and that
   I am free to withdraw at any time, without giving any
   reason, without my medical care or legal rights being
   affected.

3. I agree to take part in the above study.

4. I agree to the interview being tape recorded.

_____   _____   _____
Name of Participant   Date   Signature

_____   _____   _____
Researcher   Date   Signature

When completed, 1 for participant; 1 for researcher

Version 1, Jan 20th 2011

Appendix 4: Contribution of Perceived Stress in Stroke (COPerSS) Ethical Approval

WoSRES
West of Scotland Research Ethics Service

West of Scotland REC 4
Ground Floor, Tennent Building
Western Infirmary
38 Church Street
Glasgow
G11 6NT
www.nhsggc.org.uk

Dr Joanne Booth
Reader, School of Health
Glasgow Caledonian University
Cowcaddens Road
Glasgow
G4 0BA

Date	27 May 2011
Direct line	0141-211-1722
Fax	0141-211-1847
e-mail	evelyn.jackson@ggc.scot.nhs.uk

Dear Dr Booth

Study title:	The Contribution of Perceived Stress in Stroke (CoPerSS)
REC reference:	11/AL/0121

Thank you for your letter of 18 April 2011, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered, in correspondence by a sub-committee of the REC. A list of the sub-committee members is attached.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation, as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Covering Letter	-	24 February 2011
Evidence of insurance or indemnity	-	20 July 2010
Interview Schedules/Topic Guides	1	10 January 2011
Investigator CV	1	24 February 2011
Letter from Sponsor	-	15 February 2011
Other: Letter from The Queen's Nursing Institute Scotland	-	11 February 2010
Participant Consent Form	1	20 January 2011
Participant Information Sheet: Survey	1	20 January 2011
Participant Information Sheet: Interviews	1	20 January 2011
Participant Information Sheet: Controls - Related to TIA or stroke	2	12 April 2011
Participant Information Sheet: Controls - Not related to TIA or stroke	2	12 April 2011
Protocol	1	10 February 2011
Questionnaire: Perceived Stress	1	20 January 2011
REC application	-	22 February 2011
Response to Request for Further Information	-	18 April 2011

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

Notifying substantial amendments
Adding new sites and investigators
Progress and safety reports
Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

11/AL/0121	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely

Dr Sue Langridge
Chair

Enclosures: List of names and professions of members who took part in the review
              "After ethical review – guidance for researchers"

Copy to: Professor Malcolm Granat, Glasgow Caledonian University
             Dr Erica Packard, R&D Office, Tennent Building, Western Infirmary

Appendix 5: Substantive Amendment Ethical Approval

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 4
Ground Floor, Tennent Building
Western Infirmary
38 Church Street
Glasgow
G11 6NT
www.nhsggc.org.uk

Dr Joanne Booth
Reader, School of Health
Glasgow Caledonian University
Cowcaddens Road
Glasgow
G4 0BA

Date   28 September 2012
Direct line   0141-211-1722
Fax   0141-211-1847
e-mail   evelyn.jackson@ggc.scot.nhs.uk

Dear Dr Booth

Study title:	The Contribution of Perceived Stress in Stroke (CoPerSS)
REC reference:	11/AL/0121
Amendment number:	AM01
Amendment date:	3 September 2012

The above amendment was reviewed by the REC 4 Sub-Committee in correspondence.

Ethical opinion

The REC 4 Sub-Committee were happy to approve the following amendments:

1. Informed consent will be sought by the Stroke Nurse Consultant acting as research assistant, prior to the interview. The Stroke Nurse Consultant is already a member of the research team.
2. Contact details for volunteer TIA patients will be delivered by hand to the Stroke Nurse Consultant or sent via the Royal Mail. No personal information will be included other than the person's name, address and telephone number or email address.
3. Anonymised data will be stored on a password protected, encrypted laptop owned by NHS Lanarkshire.
4. The Stroke Nurse Consultant will have access to the personal contact details for the 20 interviewees.

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Notice of Substantial Amendment (non-CTIMPs)	AM01	03 September 2012

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

11/AL/0121:	Please quote this number on all correspondence

Yours sincerely

Evelyn Jackson

for **Dr Brian Neilly**
Chair

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Dr Erica Packard, R&D Office, Tennent Building, Western Infirmary*
                 Malcolm Granat, Glasgow Caledonian University

Appendix 6: University of Stirling Sponsorship

STIRLING FK9 4LA SCOTLAND

Carol Johnstone
Business Development Manager
RESEARCH & ENTERPRISE OFFICE
Tel: 01786 466690
Fax: 01786 466688
E-mail: carol.johnstone@stir.ac.uk

02 November 2012

To Whom It May Concern:

Research Study: Patients who have had a transient ischaemic attack or minor stroke: a grounded theory study exploring the role of perceived stress

I am pleased to confirm that the University of Stirling will undertake the role of sponsor as outlined in the Research Governance Framework for Health and Community Care for the project entitled "Patients who have had a transient ischaemic attack or minor stroke: a grounded theory study exploring the role of perceived stress", Chief Investigator Campbell Chalmers, School of Nursing, Midwifery and Health, University of Stirling.

Yours sincerely

Carol Johnstone
Research Development Manager

Appendix 7: Letter of Access Site 1

NHS

Mr Campbell Chalmers
NHS Lanarkshire
Glen Lyon Building
Coathill Hospital
Hospital Street, Coatbridge
ML5 4DN

Date   19 September 2012
Your Ref
Our Ref

Enquiries to
Extension
Direct line
Fax
Email

Dear Mr Chalmers

Letter of access for research

As an existing NHS employee you do not require an additional honorary research contract with this NHS organisation. We are satisfied that the research activities that you will undertake in this NHS organisation are commensurate with the activities you undertake for your employer. Your employer is fully responsible for ensuring such checks as are necessary have been carried out. Your employer has confirmed in writing to this NHS organisation that the necessary pre-engagement check are in place in accordance with the role you plan to carry out in this organisation. This letter confirms your right of access to conduct research through NHS   for the purpose and on the terms and conditions set out below. This right of access commences on 19 September 2012 and ends on 31 October 2013 unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor to NHS   premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through NHS   you will remain accountable to your employer **NHS Lanarkshire** but you are required to follow the reasonable

instructions of your nominated manager **Dr**   in this NHS organisation or those given on his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with NHS   policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with NHS   in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on NHS Ayrshire and Arran premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

NHS   will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Where applicable, your substantive employer will initiate your Independent Safeguarding Authority (ISA) registration in-line with the phasing strategy adopted within the NHS (as from 26th July 2010 at the earliest). Once you are ISA-registered, your employer will continue to monitor your ISA registration status via the on-line ISA service. Should you cease to be ISA-registered, this letter of access is immediately terminated. Your substantive employer will immediately withdraw you from undertaking this or any other regulated activity and you MUST stop undertaking any regulated activity.

Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or ISA registration, or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the NHS organisation that employs you through its normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely

c.c.   Joan James, NHS Lanarshire

Appendix 8: Letter of Access Site 2

Research & Development

NHS

Mr Campbell Chalmers
NHS Lanarkshire
Glen Lyon Building
Coathill Hospital
Hospital Street, Coatbridge
ML5 4DN

Date   6 November 2012
Enquiries to
Extension
Direct Line
Email

Dear Mr Chalmers,

Letter of access for research

As an existing NHS employee you do not require an additional honorary research contract with this NHS organisation. We are satisfied that the research activities that you will undertake in this NHS organisation are commensurate with the activities you undertake for your employer. Your employer is responsible for ensuring such checks as are necessary have been carried out. This letter confirms your right of access to conduct research through NHS   for the purpose and on the terms and conditions set out below. This right of access commences on 06/11/12 and ends on 31/10/2013 unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor to NHS   premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through NHS   you will remain accountable to your employer NHS Lanarkshire but you are required to follow the reasonable instructions of your nominated manager   in this NHS organisation or those given on her/his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with NHS   . policies and procedures, which are available to you upon request, and the Research Governance Framework.

NHS to NHS letter of access: for NHS researchers who have a substantive NHS contract of employment or clinical academics with an honorary clinical contract with an NHS organisation
Version 1.0   Page 1 of 2

You are required to co-operate with NHS   in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on NHS premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

NHS   will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the NHS organisation that employs you through its normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely

cc: R&D office at NHS
        HR department of the substantive employer (and provider of honorary clinical contract, where applicable)

NHS to NHS letter of access: for NHS researchers who have a substantive NHS contract of employment or clinical academics with an honorary clinical contract with an NHS organisation
Version 1.0

Appendix 9: Letter of Access Site 3

NHS

Mr Campbell Chalmers
Stroke Nurse Consultant
NHS Lanarkshire
Glen Lyon Building
Coathill Hospital
Coatbridge ML5 4DN

Date   13 September 2012
Our Ref

Direct Line
Fax
Email:

Dear Mr Chalmers,

Letter of access for research

As an existing NHS employee you do not require an additional honorary research contract with this NHS organisation. We are satisfied that the research activities that you will undertake in this NHS organisation are commensurate with the activities you undertake for your employer. Your employer is responsible for ensuring such checks as are necessary have been carried out. This letter confirms your right of access to conduct research through **NHS**
for the purpose and on the terms and conditions set out below. This right of access commences on **11th September 2012** and ends on **11th January 2014** unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor to NHS   premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through NHS   you will remain accountable to your employer **NHS Lanarkshire.**

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with NHS   policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with NHS   in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while NHS
             premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as

is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

NHS   will not indemnify you against any liabilty incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the NHS organisation that employs you through its normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely

Appendix 10: Interview Schedule Version 1

<u>Interview Schedule</u>

The interview will explore the perceptions of stress for people who have experienced a TIA.

Framework for interview: conditions / actions, interactions / consequences

Start interview: social chat/warm up

Questions: core questions (numbered) to be asked at all interviews; possible supplementary questions (bullet points) listed.

CONDITIONS

1. Can you tell me about your TIA and what happened?

2. Can you tell me about what you understand by stress and what it means to you?

ACTIONS, INTERACTIONS

3. How do you deal with stress? What types of things do you do?
   - How have these made a difference?

CONSEQUENCES

4. Do you think there is any connection between stress and your TIA? Can you give a reason(s) for your answer?
   - How has stress affected your health?

Further open questions will be used to expand/explore answers.

Anything else you would like to say?

End interview

Version 1

Appendix 11: Interview Schedule Version 2

<u>Interview Schedule</u>

The interview will explore the perceptions of stress for people who have experienced a TIA.

Framework for interview: conditions / actions, interactions / consequences

Start interview: social chat/warm up

Questions: core questions (numbered) to be asked at all interviews; possible supplementary questions (bullet points) listed.

CONDITIONS

1. Can you tell me about your event and what happened?
   - Was it a TIA?
   - What caused or triggered your TIA?

2. Can you tell me about what you understand by stress and what it means to you?

ACTIONS, INTERACTIONS

3. How do you deal with stress? What types of things do you do?
   - How have these made a difference?
   - Does your partner (if applicable) and family make any difference?
   - How have you managed your health problem?

CONSEQUENCES

4. Do you think there is any connection between stress and your TIA? Can you give a reason(s) for your answer?
   - How has stress affected your health?
   - Have you noticed any changes to your nature or behaviour?
   - Do you have any on-going concerns about stress and your health?

Version 2

Further open questions will be used to expand/explore answers.

Anything else you would like to say?

End interview

Appendix 12: Interview Schedule Version 3

<u>Interview Schedule</u>

The interview will explore the perceptions of stress for people who have experienced a TIA.

Framework for interview: confidence / control, coping / consequences

Start interview: social chat/warm up

Questions: core questions (numbered) to be asked at all interviews; possible supplementary questions (bullet points) listed.

CONFIDENCE

1. Can you tell me about your event and what happened?
    - Was it a TIA?
    - What caused or triggered your TIA?

2. Can you tell me about what you understand by stress and what it means to you?
    - Can you tell me about what causes of stress for you?
    - How has stress affected your health?

3. Do you think there is any connection between stress and your TIA?
    Can you give a reason(s) for your answer?

CONTROL, COPING

4. How do you cope with stress? What types of things do you do?
    - How have these made a difference?
    - Does your partner (if applicable) and family make any difference?
    - How have you managed your health problem?
    - Do you feel in control of your health problem?
    - Have you had nay help to cope with stress?

Version 3

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CONSEQUENCES

5. What have been the consequences of your TIA?

   Can you give a reason(s) for your answer?

   - Do you have any fears about your health?

   - Have you notice any changes to your nature or behaviours?

   - Have you experienced any positive or negative outcomes as a result of your TIA?

6. Do you feel you have regained your confidence and/or well-being after TIA?

   Can you give a reason(s) for your answer?

Further open questions will be used to expand/explore answers.

Anything else you would like to say?

End interview

Appendix 13: Participant Letter

Name
Address Line 1
Address Line 2
Address Line 3
Postcode

Dear Name,

The Contribution of Perceived Stress in Stroke

You attended an outpatient clinic for transient ischaemic attack (TIA) and completed a questionnaire about stress at the clinic. You provided your contact details on the questionnaire to indicate you might be willing to help further and talk to a researcher about your experiences of stress.

My name is Campbell Chalmers. I am an experienced nurse and also a student at the University of Stirling. I am writing to invite you to take part in a research study which forms part of a Doctor of Nursing educational course at the University of Stirling.

Enclosed is the **Participant Information Sheet** to give you more information.

The purpose of the study is to find out about stress, what people feel about it and whether they think it plays a part in their illness or medical condition.

To help to do this I would like to talk to you. It would take about an hour of your time. I can come to your home to do this or meet at a place of your choice. You will be asked questions about your experiences of stress and your medical condition. All that you say will be anonymous and you will not be personally identified by anything you say. I would like to tape record your answers, with your permission.

I will be contacting you by telephone in the next month to discuss the study and ask whether you are willing to help. You do not have to take part if you do not wish to and you will not be asked to give your reason. Please contact me if your personal circumstances have changed and you are no longer able to take part. Any decision you make will have no detrimental effect on your treatment or care.

Thank you for taking the time to read this letter.

Yours sincerely

Mr. Campbell Chalmers
Clinical Doctorate Student, University of Stirling
Tel: ██████████

A classic grounded theory study exploring the perceptions of stress for people who have experienced a transient ischaemic attack

Abstract

Background. TIA is a well-recognised warning sign of subsequent stroke, but effective management of risk factors can substantially reduce this risk. Stress is a known risk factor for stroke, but there is a lack of research into the role stress plays in TIA. Few studies have explored the relationship between perceived stress and TIA; how stress affects health and well-being; and what actions influence stress.

Aim. This research study explored the perceptions of stress for people who have experienced a transient ischaemic attack (TIA).

Methods. The study was conducted following a classic grounded theory tradition. Thirteen semi-structured interviews were undertaken with people who had experienced a TIA. Participants were recruited from outpatient clinics located in three Scottish Health Boards.

Findings. Perceived stress was commonly experienced by participants and was a significant feature throughout their TIA journey. Although it was not universally acknowledged as a contributing cause of their TIA, it did form part of their lived experiences. Stress was an influencing force and its presence or absence contributed to a situation of imbalance or balance of mental and physical health and well-being. The factors that influenced stress could stabilise or destabilise this sense of balance. Equilibrium was the achievement of a balance between these interdependent elements and formed the core category: the equilibrium of health and well-being for the individual. This led to the discovery of the substantive theory: if perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being.

Conclusions. This study led to new knowledge, bringing awareness and understanding of stress for people who have experienced a TIA, which will improve their health and well-being, and potentially reduce their risk of stroke. The research resulted in the discovery of a new theory that contributes to the advancement of TIA management in clinical practice.

Keywords: grounded theory, transient ischaemic attack, stress, self-management

Introduction

A transient ischaemic attack (TIA) is a warning sign of an increased risk of stroke and currently affects 76 people per 100,000 of the Scottish population each year (NHS National Services Scotland, 2016). Of the people who experience a TIA, as many as 20% will go on to have a stroke, which can result in disability or death (Johnston 2007). In order to minimise the number of people who will subsequently experience a stroke, it is essential to address all the potential risk factors and implement effective preventive measures (Muir 2008; Egido et al. 2012). Preventive measures have traditionally addressed the common risk factors such as high blood pressure, smoking, obesity, unhealthy diet and physical inactivity (Warlow et al. 2008). More recently stress has been recognised as a risk factor for stroke (Booth et al. 2015; O'Donnell et al. 2010); however, currently there is a lack of awareness and understanding of the role of perceived stress for people who have experienced a TIA. The interplay between perceived stress and TIA is under-investigated and current studies lack in-depth exploration of perceptions of people. Although qualitative studies have found that having a TIA permanently changed people's quality of life and their perception of their health (Gibson and Watson 2012; Croot et al. 2014); little is known about the role of stress on their health and well-being. There is also a lack of evidence to guide clinical practice in relation to the optimum approach to influence and manage stress to reduce its impact (Lawrence et al. 2011; Tan and Morgan 2015).

The study

Aim

The aim of the study was to explore the perceptions of stress for people who have experienced a TIA and to address the following research questions:

1. What is the patients' understanding of the relationship between perceived stress and TIA?
2. How has perceived stress affected the patients' physical and mental health and well-being?
3. What actions has the patient taken to influence perceived stress and have these actions made a difference?

It used a classic grounded theory approach to address the aim and research questions to discover new meaning (Glaser and Strauss 1967).

Participants and methods

A total of thirteen patients with a confirmed diagnosis of TIA participated. The patients were from five different TIA hospital outpatient clinics across three NHS Scotland Health Boards. The participants comprised eight men and five women. Ages ranged between 36 and 74 years with a mean age of 64 years (median age of 67 years). The number of days between diagnosis of TIA and participation in the study interview ranged from 77–585; with a mean of 344 days (median of 395 days). The rural-urban classification defines geographical areas as rural if they fall outside of settlements with more than a 10,000 resident population; therefore five participants were located in rural areas and eight participants in urban areas. The Scottish Index Multiple Deprivation (2016) quintile rates are based on postcodes and rendered as: 1 the most deprived to 5 the least deprived. Six participants were rated in the lower two quintiles and seven rated in the upper two quintiles. Ten participants lived with a partner, two lived with family and one lived alone. Table 1 presents the sample characteristics:

Table 1: Sample Characteristics

Participant	Gender	Age	Location	Deprivation*	Lives with:
1	Male	69	Rural	2	Partner
2	Female	58	Urban	2	Partner
3	Male	36	Urban	1	Family
4	Male	74	Urban	4	Partner
5	Female	70	Rural	4	Partner
6	Female	67	Urban	4	Partner
7	Male	68	Rural	5	Partner
8	Female	71	Urban	4	Alone
9	Female	67	Urban	1	Partner
10	Male	65	Urban	2	Partner
11	Male	68	Urban	1	Family
12	Male	52	Rural	5	Partner
13	Male	65	Rural	4	Partner

* Scottish Index Multiple Deprivation (2016): 1 most deprived to 5 least deprived

Sampling commenced with a purposive sample which was diverse in: TIA presentation, health status, gender, age and geographical location. There were no preconceptions in relation to whether perceived stress was a risk factor or not in relation to participant's experience of TIA. Data collection occurred around 12 months from the participants' TIA event using semi-structured interviews which lasted approximately 35 minutes. Data were analysed using a classic grounded theory approach coherent with the defining traditional components of Glaser and Strauss's (1967) original work and subsequent work of Glaser (1978; 1992). A systematic approach proceeded through three stages of coding: open, selective and theoretical. The process of coding identified categories, connecting them by means of constant comparative analysis. Subsequent theoretical sampling enabled selective data to be collected during the participant interviews to develop the emerging categories. Filed notes and theoretical memos helped develop concepts, build relationships between categories and allow specific themes to emerge. After thirteen interviews theoretical saturation was achieved in that no new major themes arose. The research methods drove analysis and enabled new meanings to emerge of the role of perceived stress for participants and led to the discovery of a new substantive theory.

Ethical considerations

Ethical approval was granted by the West of Scotland Research Ethics Service along with permissions from the research and development departments of the three NHS Health Boards involved. The study was an education project as part of the researcher's Doctor of Nursing at the University of Stirling. A patient information sheet provided advice to discuss any concerns about perceived stress with the staff in the clinic, their general practitioner or practice nurse. The contact details for a charity helpline were provided as well. Data provided was kept strictly confidential, and managed and stored in compliance with the Data Protection Act (1998) and local policies and procedures.

Findings

The findings resulted in the emergence of the core category: the equilibrium of health and well-being for the individual. This is symbolically illustrated as weighing scales (Figure 1).

Figure 1: The Equilibrium of Health and Well-being after TIA

From the findings, perceived stress was commonly experienced by participants and was a significant feature throughout their TIA journey.

'One of the most stressful times in my life.' (Participant 12)

Although stress was not universally acknowledged as a contributing cause of their TIA by participants, it did form part of their lived experiences. Stress was a key influencing force and can be seen as forming the main balance beam on the weighing scales. The presence or absence of stress may contribute to a situation of imbalance or balance. Categories that emerged can aid (stabilise) or hamper (destabilise) the sense of balance; resources can also influence stress (influencers). Stabilisers and destabilisers can be viewed as forming the two weighing plates on the scales.

-   Stabilisers

Stabilising factors are able to lessen the effect of stress and create more of the sense of balance having a positive effect on the individual's health and well-being. Stabiliser concepts that emerged through the analyses included: confidence (certainty), being in control, and coping.

Confidence was the first key stabiliser concept that emerged. Participants were more confident when they knew what had happened, what they were dealing with, and what they potentially faced in the future. Knowledge of what stress was, helped participants deal with the *'ups* and *downs'* better:

> *''I had to really learn what stress was.'* (Participant 7)

Participants expressed the view that sources of information were a means to gaining understanding. Belief in oneself was another influencing factor that created confidence for participants. The participants that appeared to have a more confident outlook spoke of having belief in themselves. This was amplified by approaches such as adopting a *'can do'* attitude:

> 'Concentrate *on the things I can do, and get myself built up to be able to do them.'*
>
> (Participant 5)

The next key stabiliser concept that emerged was being in-control. Stress was viewed by some participants as being ever present; however it was perceived that stress could be managed*:*

> *'I find there is much less stress when I am dealing with things within my control.'* (Participant 12)

Participants expressed taking control of their situation by planning. It created a sense of autonomy and empowerment and restored control:

> *'My plan is to get back to get myself under control again.'* (Participant 5)

The final key stabiliser concept that emerged was coping with perceived stress. Coping behaviours such as self-management, stress management, exercise and relaxation, were all emphasised. Coping was also associated with taking personal responsibility and managing one's own health and well-being:

> *'I'm very into self-help … get myself sorted out … to see what's important and what isn't.'*
>
> (Participant 8)

Making positive lifestyle choices and changes, proactive approaches to managing stress, and using self-management techniques to cope:

> *'What are the important things in life, what are the things you want to do … spend more time with the family, spend more time with my wife, and don't spend all the time in the work.'* (Participant 12)

- Destabilisers

Destabilising concepts worsened the effect of stress and created more of the sense of imbalance having a negative effect on health and well-being. Destabiliser concepts that emerged through the analyses included: fear (uncertainty), being out of control, and not coping.

One of the key destabiliser concepts that emerged was fear. One of the main ways fear was expressed was as uncertainty. The unknown and unexpected nature of the TIA event happening *'out of the blue'* left some fearful about the situation and their future:

> *'It was just frightening… at the back of my head, thinking is this going to happen again?'* (Participant 5)

The next concept that emerged was being out of control. Participants felt a sense of helplessness they were not *'in control'*. Symptoms experienced at the time of the event, such as a loss of speech, created a sense of being out of control:

> *'The frightening thing was not being able to get the words out… I would hate… not to be able to talk.'* (Participant 5)

The loss of control left some thinking they were powerless and unable to influence or change things.

The final destabiliser concept was a sense of not coping after the event. Participants described themselves as being *'run down', 'worn out' and 'exhausted':*

> *'Just simply the body saying for God's sake I don't have the energy, I can't do it anymore.'* (Participant 7)

- Influencers

Influencers could help regain well-being by affecting stress and can be seen as forming the base plate of the scales. Influencer subcategories that emerged included: knowledge and self-belief, relaxation and exercise, and connections.

Knowledge and self-belief in oneself was the one of the influencing factors. The participants that appeared to have a more confident outlook spoke of having knowledge about what had happened and belief in themselves that things would get better and improve:

> *'I just had this belief that it would start to get better.'* (Participant 12)

In contrast, there was also uncertainty for some participants over understanding what had happened and this affected their self-belief. It left some participants fearful:

> *'I think one of the things after the TIA thing, it was the uncertainty of knowing had it happened; is it having an effect on me? It was the worry about that was more of a problem than the concept of it actually having happened.'* (Participant 7)

Both exercise and relaxation were influencing factors on stress. Exercise was reported by participants as an effective way of de-stressing, and keeping fit and healthy:

> *'I walk about thirty miles a week sometimes more ... I love to get out it's the best thing.'* (Participant 8)

Relaxation was expressed as an effective way of coping with stress:

> *'To cope with stress you know you just have to calm down.'* (Participant 6)

Although, some were aware of their lack of exercise:

'I don't get enough exercise and I do nothing but sit.' (Participant 9)

There were those who found it difficult to relax:

> *'It's one of the problems in not being able to do good relaxation or to switch off the problem is I finish up with too many things going around my head… I just get tighter… not being able to do good relaxation or to switch off.'* (Participant 7)

Finally, another influencer of stress was connections either with family and friends or health care professionals. Participants explained the value of connections in *'making a difference'* both in terms of how they coped emotionally and practically:

> *'It makes every difference, it really does, and he really is very supportive.'* (Participant 6)

However, participants relayed stories where relations with individual family members had become fractured or had broken down; and expressed a lack of contact with others and a sense of loneliness:

> *'I am just lonely now you know. I mean I am no looking for sympathy but you do feel alone.'* (Participant 11)

- Substantive Theory

The core category and associated findings led to the discovery of a new substantive theory:

> **If perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being.**

The new theory conceptualises the relationship of perceived stress and TIA. The overall analysis led to the emergence of the theory, that to effectively manage stress requires a balance of the weighing scale (Figure 1), thereby achieving a state of equilibrium essential for optimal physical and mental health and well-being after TIA.

Theoretical coding was undertaken to connect, shape and build the theory. The theoretical codes were compared and contrasted with relevant literature to help with the maturity and densification of the theory. The codes were the building blocks which created the cohesion to construct the theory. The theoretical codes comprised of the following: perceived stress, self-management, and achievement of equilibrium for health and well-being.

The theoretical code perceived stress was commonly experienced by participants at all stages of the figurative journey: before, during and after the TIA. Although it was not universally acknowledged by participants as a potential contributing cause of their TIA, it did form a part of their lived experiences. Perceived stress was seen as an influencing force in achieving health and well-being. Its presence and level of impact was a determining factor in achieving a natural balance of health and well-being for the individual.

The next theoretical code was self-management. The person's own ability to cope or not with stress can aid (stabilise) or hamper (destabilise) their sense of balance of health and well-being. Key concepts that were found to either stabilise or destabilise the natural balance are closely associated with self-management, and include level of confidence, being in control and ability to cope. These were influenced by: an understanding of stress and how to deal with it; a person's self-belief in their own ability; exercise as a way of keeping fit and managing stress; the value of relaxation and leisure activities; and finally connections with others.

The theoretical code, the achievement of equilibrium for health and well-being, was developed from the core category. Stress required to be balanced to achieve a state of equilibrium essential for optimum physical and mental health and well-being after TIA. Stress was a key influencing force and the presence or absence of stress can contribute to a situation of imbalance or balance. The impact or degree of stress can determine the level of imbalance or balance. Influencers played a role in the type and degree of stress perceived by the individual. Influencers aid the individual's ability to achieve a state of natural balance or equilibrium.

The theory generated was compared and contrasted to existing literature and theories to help with the densification and to achieve a reasonable level of abstraction. The theory is directly related to the context and setting of the study and demonstrates conceptual and explanatory power, making it persuasive and helpful to create change. The participants' perceptions are important to clinical practice because they raise the possibility to influence the impact of perceived stress by empowering

individuals to self-manage, learning new skills and build on existing strategies. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. This is significant because it raises the opportunity to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke.

Discussion

The study led to the uncovering of new knowledge for clinical practice in TIA management. The research made a unique contribution by bringing a new appreciation that perceived stress was commonly experienced at all stages. It was found to feature before the TIA, during and after the TIA. Participants did not share the view that stress had contributed to causing the TIA; however perceived stress was found to be part of participants' lived experiences. The study affirmed the importance of considering psychosocial factors, such as stress, for those who experience a TIA. It highlights the need for health care professionals to take cognisance of the role of perceived stress as an influencing force in achieving health and well-being. In outpatient clinic settings it is important for conversations to be had between health care professionals and patients about stress in their lives, the impact on their health and well-being, and the potential to reduce their risk of stroke. Through these conversations health care professionals could have an influence on the patients understanding of stress, how to deal with it and ensure the optimum chances of making sustainable change. It also creates an opportunity for health care professionals to offer appropriate and timely interventions; such as, accessing local community-based support including generic classes for relaxation, exercise and stress management. There are also a wide range of generic self-management resources that can enable and empower people to manage their own stress, learning new skills and build on existing strategies to cope. Support and follow-up by health care professionals is important to ensure the optimum chances of making sustainable change, as managing stress effectively was an ongoing challenge for those who experienced a TIA. There may also need to be consideration given to alleviate potential constraints and barriers in relation to health care services and resources to ensure the effective management of psychosocial factors, such as stress.

A natural follow-on study could explore further if perceived stress can be effectively self-managed after TIA; and how an individual can achieve a state of natural balance or equilibrium for optimum health and well-being. Studying specific sample groupings would enable a wider exploration of perception of stress; particularly in relation to variation in demographics such as age, gender,

ethnicity, and social deprivation. Further research would be valuable in determining the most effective ways to specifically assess and manage stress after TIA.

This research study had a number of limitations. The small sample size; however, following thirteen interviews being conducted, compared and analysed, a judgement was made that the main categories showed a depth and variation in terms of their development and no new relevant concepts being found. The study was reliant on the recall of the participants which could have been affected by the time elapsed, especially for those at the furthest time since the TIA event. The study also did not capture patients who may have had a TIA, but were not referred for specialist assessment; therefore the study may not reflect the experience of all TIA patients. The final limitation was the potential for researcher bias. CC was undertaking clinical practice in the field of TIA management at the time; however, the researcher's own place of work did not feature in the study.

Conclusions

This research has made a unique contribution by bringing a new appreciation that perceived stress was commonly experienced by people who had had a TIA. Although it was not universally acknowledged as a potential contributing cause of the TIA, it did form a part of participants' lived experiences. Stress is a key influencing force and its presence or absence may contribute to a situation of imbalance or balance essential for optimum physical and mental health and well-being. The substantive theory emerged: if perceived stress can be effectively self-managed after a TIA, a state of equilibrium can be achieved which supports health and well-being. The findings are important to clinical practice because they help make sense of the experience of stress for people who have experienced a TIA. It raises the possibility of influencing the impact of perceived stress by empowering individuals to self-manage. It also creates an opportunity for health care professionals to offer appropriate and timely interventions. This research is significant because it raises the opportunity to improve health and well-being for the individual after TIA and potentially reduce the risk of stroke. The research resulted in the discovery of new knowledge and a new theory that contribute to the advancement of TIA management in clinical practice.

Acknowledgements

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