A Constructivist Grounded Theory of Firefighter Perceptions of Stress, Coping and the Relationship to Health

by

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Abstract

This qualitative research was a constructivist grounded theory designed to develop an understanding of how firefighters perceive and cope with stressful situations and the impact this has on their perceptions of health. This study was framed in a social ecological perspective with the community of firefighting providing the environment within which to explore stress and coping. Of particular concern here are the stressors associated with firefighting. Prior research with firefighters has often been epidemiological and statistical in nature, focusing on measures of cardiovascular disease, cancer, and depression (Baker & Williams, 2001; Brown et al., 2002; Murphy et al., 1999; Regehr et al., 2002; Regehr et al., 2003). Qualitative research examining the perception of stress among firefighters that includes personal stories allows firefighters the opportunity to describe what it is like to be met with physically and mentally challenging situations on a daily basis. Twelve in-depth, semi-structured, face-to-face interviews with a brief questionnaire were conducted with firefighters from a Southern Ontario Fire Department. Four main themes emerged describing the persona of the firefighter, the stressors of firefighters, coping strategies of firefighters, and firefighters’ perceptions of health. Stressors include requirements of the job, traumatic calls, tensions with co-workers, the struggle between the family at home and the family at work, political stressors with the City, and the inner struggle. Avoidance coping, approach coping, and gaining perspective emerged as the three coping styles of firefighters. Health was defined as including physical, mental, social and spiritual aspects. A model of the findings is provided that depicts the cyclical nature of the stress-coping-health relationship among firefighters.
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CHAPTER 1.0: INTRODUCTION

Stress is a phenomenon that presents itself in every facet of daily living and has a rippling effect into the minutest aspects of one’s life. Stress finds its way into all settings, including one’s home, relationships, leisure, and work. The experience of stress in the work environment of the emergency worker has been identified as unique and worthy of examination. According to Beaton, Murphy, Johnson, Pike and Corneil (1999) “emergency workers are ... a self-selected occupational group and may not be representative of the general population in terms of their personalities nor their coping strategies” (p. 294).

Of particular concern are the stressors associated with firefighting. Stress and stress-related symptoms are a concern for firefighters because they can interfere with job performance and negatively affect health status (Corneil, Beaton, Murphy, Johnson & Pike 1999). The chronic health effects of stress specific to firefighters have been an intense area of research since the 1980s (Guidotti & Clough, 1992). Prior research with firefighters has often been epidemiological and statistical in nature, focusing on measures of cardiovascular disease, cancer, and depression (Baker & Williams, 2001; Brown, Mulhern & Joseph, 2002; Murphy et al., 1999; Regehr, Goldberg, Glancy & Knott, 2002; Regehr, Hill, Knott & Sault, 2003).

Recent medical developments suggest emotional processes such as stress influence nearly all bodily systems and can be linked to a number of diseases (Baum & Posluszny, 1999). The psychological stress experienced by firefighters includes witness to pain, injury, and strong emotions (Guidotti and Clough, 1992). Studies that enable firefighters to talk about these stressors and the meanings assigned to them are rare. Based on the literature reviewed in Chapter Two, it is evident that research examining the perception of stress
among firefighters must include personal stories and perceptions related to strategies adopted to cope with work-related stressors. This study, therefore, adopted a qualitative methodology to allow firefighters an opportunity to describe their experiences and perceptions of stressors and how these stressors affect their health.

The specific tradition of qualitative research being employed throughout this study is grounded theory. According to Streubert and Carpenter (1999), the purpose of grounded theory “is to explore social processes with the goal of developing a theory” (p. 105). Allowing participants to reveal their stories and truths is a specific form of grounded theory called “constructivist grounded theory” (Patton, 2002). The constructivist approach to grounded theory looks at the characteristics of the phenomena, in this case stressful experiences, as defined by the participants. Therefore, interview questions, “aim to get at the meaning, not the truth” (Patton, 2002, p. 128).

The purpose of this grounded theory study was to develop an understanding of how firefighters perceive and cope with stressful experiences and the relationship of this process on their health. Through semi-structured qualitative interviews with twelve paid firefighters, this study aimed to answer the following research questions:

1. What is perceived as a stressful experience for firefighters?
2. How do firefighters perceive stressors associated with occupational stress?
3. What are the coping mechanisms for firefighters?
4. What is the relationship between the stress-coping process and health?

The primary focus of this research was on firefighters’ perception of stress and coping, and the impact on health. Health in this study is defined by the World Health Organization as “physical, mental, social, and spiritual well-being” (WHO, 2004). This
definition acknowledges the "total person" not just the diseases or illness, or lack thereof. Each element of health adds a unique dimension to one's overall well being, and contributes to the stress-coping process in specific ways.

According to Lazarus and Folkman (1984), "what is important [in the perception of stress] is the 'psychological situation', which is a product of the interplay of both environment and person factors" (p. 23). In order to best understand the perception of work-related stressors, it is important to grasp the context in which the individual works and how he interacts with this environment. The theoretical framework driving this study is ecological theory. A key feature of ecological theory is the emphasis on the interactions between the person and her environment. Ecological theory encompasses the "transactional processes, not the individual components of either the person or environment in a system" (Ungar, 2002, p. 482). An emphasis on the person-environment interaction is known as reciprocity (Heft, 2001). As a person enters and affects the environment, he is continuously 1) creating, 2) restructuring, and 3) adapting to the new situation (Ungar, 2002).

The following chapter builds a foundation for understanding stress, coping, and health among firefighters. Included is: an overview of ecological theory; literature on stress, coping, and health; and a summary of research related to firefighters. Chapter Three describes the methodology employed throughout the research process, as well as a discussion of the appropriateness of a qualitative approach to studying stress, coping and health among firefighters. Chapter Four presents the findings from the interviews with firefighters. Specifically, the four themes of persona, stress, coping, and health will be described using the words of the participants. Each theme is then elaborated upon drawing from the current literature. Chapter Five then presents a model of the relationships between the four themes,
based on the perceptions of the participants in the study and the existing literature. Chapter Five concludes with a discussion of the strengths and weaknesses of the current study and provides suggestions for future research.
CHAPTER 2.0: REVIEW OF LITERATURE

The aim of this study is to understand firefighters’ perceptions of stress, coping and health within an ecological theory framework, with an emphasis on the transactional process occurring between the individual and his/her environment. To provide a foundation for this study, literature is drawn from a variety of fields of research including occupational health, community health, health psychology, psychology, physiology and sociology. The literature covered in this review is divided into five sections: ecological theory (2.1), stress and trauma (2.2), coping (2.3), health and stress (2.4), and stress, coping, and health among firefighters (2.5). Within each of these sections, the literature progresses from a broad description of the concept, to an understanding of the phenomena within an occupational setting.

2.1 Ecological Theory as a Framework for the Study

Ecological theory has been gaining acceptance in the literature in recent decades. The term “ecology” was used in 1868 by Ernst Haeckel to describe the interdependence of organisms in their natural environment. Ungar (2002) describes ecology as “the interdisciplinary scientific study of the living conditions of organisms in interaction with each other and with the surroundings, organic as well as inorganic” (p. 481). Through the evolution of research, ecology now refers to the “transactional processes, not the individual components of either the person or environment in a system” (Ungar, 2002, p. 482).

A primary feature of the human ecology theory is the emphasis on reciprocity between the person and the environment. Reciprocity refers to interactions between the individual and her environment in order to learn about environmental properties and contribute to the changes in the environment (Heft, 2001). As a person enters new environments, he adapts to demands and, through his presence, changes the situation at least
structurally. As a person affects his environment, he is continuously: 1) creating, 2) restructuring and 3) adapting to the new situation (Ungar, 2002).

Ecological theory is used in a number of disciplines including psychology, sociology, and health. Understanding health and wellness within an ecological theory framework leads to several assumptions, including:

- Different dimensions of well-being are related to diverse conditions in the socio-physical environment.
- Individual and community well-being are dependent on multiple aspects of the person/population, as well as dimensions of the environment.
- Health is an outcome of the quality of the person-environment fit.
- The existence of “leverage points,” which are individual or environmental conditions that exert a disproportionate amount of influence on health and well-being.
- The interdependence between physical and social environments.
- A comprehensive understanding of health results from multidisciplinary approaches (Grzywacz & Fuqua, 2000).

An ecological perspective on health demands an interdependent, multidimensional, multilevel, interactional view of the individual or community (Grzywacz & Fuqua, 2000). Ecology theory suggests that poor working conditions have a negative impact on overall health. Negative working conditions influence employees’ psycho-physiological conditions and undermine positive health behaviours. Conversely, positive subjective ratings of health are related to supportive work environments that have job prestige as well as stability and growth potential. Positive work environments are associated with lower rates of heart
disease and fewer chronic illnesses (Grzywacz & Fuqua, 2000). Ettner and Grzywacz (2001) examined the impact of job characteristics on workers’ physical and mental health. The findings suggest that the negative effects experienced by workers are related to greater levels of perceived constraints, neuroticism, working nights/overtime, serious ongoing stress at work, and high job pressure. More positive physical and mental health is related to elevated levels of extraversion, self-employment, part-time employment, and greater decision making latitude.

2.2 Stress and Trauma

2.2.1 Stress

“Stress” is a term that is very much a part of our everyday lives. Because of its familiarity in our daily living, the actual meaning of the term has become unclear (Kasl, 1984; Lazarus, 1966). “Stress” is a term that is often used interchangeably with “conflict,” “anxiety,” “extreme situations” or “frustration” (Lazarus, 1966). The use of the term “stress” is not only confusing, but researchers and writers have also been unable to settle upon a concrete definition of the word (Kasl, 1984). According to Bergdahl and Bergdahl (2002), stress is a psychological mobilization response. For Kelly, Hertzman and Daniels (1997), stress is a “neural and endocrine adaptation” (p. 439). And for Baum and Posluszny (1999), stress is defined as “nonspecific aspects of dealing with environmental change” (p. 140). Kasl (1984) offers four definitions of the term stress:

a) [a]n environmental condition; b) the appraisal of an environmental situation; c) a response to the environmental condition or its appraisal; d) an interactive term indicating the relationship between environmental demands and the person’s capacity to meet those demands (p. 320).
As these definitions indicate, stress can be defined from a psychological, physiological, and behavioural perspective. Each of these definitions and approaches to stress offer unique considerations to the study of stress (Lazarus, 1966). Due to the controversy surrounding the definition of stress, some authors have avoided defining the term; while others suggest using the term stress as a label for a large, interdisciplinary area of research and interest (Monat & Lazarus, 1991).

Within health psychology, stress is defined as, “a relationship between the individual and the environment that is appraised by the individual as taxing or exceeding his/her resources and endangering his/her well-being” (Lazarus & Folkman, 1984, p. 19). This definition captures the reciprocity of the individual and their environment that is central to both ecological theory and the transactional approach to understanding stress. This definition of stress maintains its relevance and continues to be cited in the work of current authors (see Folkman & Moskowitz, 2000; Monat & Lazarus, 1991; Park & Folkman, 1997), and will therefore be used throughout the current study.

Stressors are conditions and stimuli that are perceived as stressful and have the capacity to stimulate the adaptive mechanism of an individual (Pearlin, 1999). Stressors take on a number of forms, each with their own unique influence on the individual. As Figure 1.0 depicts, the stress continuum begins at the left with the most discrete stressors, which are specific and rare events or situations. To the far right of the continuum are continuous stressors that extend over a long period of time. Wheaton (1999) places five different stressors along his stress continuum: 1) sudden trauma, 2) life change events, 3) daily hassles, 4) non-events, and 5) chronic stressors.
Figure 1.0  The stress continuum (Wheaton, 1999, p. 185)

Trauma, as described by Laugani (2002), refers to "a state of physical and/or emotional shock, which may be a result of real, anticipated, imagined, or repressed experiences" (p 129). Wheaton (1999) outlines three elements of traumatic events or situations:

1. The event must be more serious in level of threat than usual life change events.

2. The event may occur as an isolated event or as a long-term chronic problem.

3. Traumatic events are thought to have greater potential for long-term impacts than other stressors, due to their severity (p. 188).

Post-traumatic stress disorder (PTSD) is an identifiable condition related to exposure to extreme stress and trauma. In the American Psychiatric Association's (APA) Diagnostic and Statistical Manual (DSM-IV, 1994), PTSD is considered a response to an event that evoked intense fear, a sense of helplessness, and horror. Symptoms associated with PTSD develop after exposure to the traumatic experience(s) and must persist for a minimum of one month after the event. Signs of PTSD include "re-experiencing the traumatic event(s); persistent symptoms of increased arousal; continued avoidance of stimuli associated with the trauma and numbing of general responsiveness" (APA, 1994, p. 424). The presence of
A medium-sized cluster consists of several sub-clusters.

Each sub-cluster is connected to its parent cluster through a series of smaller clusters.

The diagram illustrates the hierarchical structure of the clusters, with each level representing a different scale of organization.
symptoms will cause disruption in the life of the victim including disruption in social, occupational and psychological functioning (APA, 1994).

Life change events are events that create significant life changes, including divorce, job loss, and marriage (Wheaton, 1999). These events typically have a clear starting point where the change begins with an announcement of (usually) negative information. Life events also tend to have a specific end point when the change has occurred and the stressor is gone.

Wheaton (1999) describes daily hassles as “the irritating, frustrating, distressing demands that to some degree, characterize everyday transaction with the environment” (p. 185). Examples of daily hassles include losing items, heavy traffic, and caring for a pet. This group of stressors is based on realities of everyday life that, when experienced in excess, can cause stress. Some items categorized as daily hassles are discrete and unanticipated events, such as traffic jams and losing items. Other daily hassles, such as caring for a pet or planning meals, are chronic in nature because they occur as part of one’s daily routine and over an extended period of time (Wheaton, 1999).

Non-events are “events [that] are desired or anticipated, but do not occur” (Wheaton, 1999, p. 188). It is believed that a lack of anticipated change can be as stressful as change. Examples of non-events include not receiving an anticipated promotion or not qualifying for a loan (Wheaton, 1999).

Chronic stress develops slowly as problematic conditions in the environment. Individuals can continue daily routines while coping with the on-going stressors. Chronic stressors are also more open-ended and require more resources to cope without a guarantee of a solution (Wheaton, 1994).
2.2.2 Stress Responses

Through the debate revolving around specific definitions of stress, two broad categories have been developed into which definitions tend to fall: physiological or transactional (Singer & Davidson, 1991). Physiological definitions use the term stress to mean “a reaction of the organism to some sort of outside threat” (Singer & Davidson, 1991, p, 37). Selye’s (1991) General Adaptation Model (see Figure 2.0) falls into this category. Selye (1991) argues that regardless of the cause of the threat, an organism will prepare itself to meet the threat with consistent physiological reactions. Over an extended period of time, exposure to stress will cause strain on the organism’s system. As indicated in Figure 2.0, the General Adaptation Model has three phases. The first phase is the alarm phase where the body initially reacts to the stressor. The second phase is called the resistance phase, when the organism will make efforts to cope with the extended exposure to strain and tension. The final phase is the exhaustion phase, in which the organism is no longer able to overcome the threat and physiological resources deplete, resulting in illness (Selye, 1991).

![General Adaptation Syndrome](image)

Figure 2.0 General Adaptation Syndrome (Taylor, 1999, p. 170).

Transactional definitions of the stress response are rooted in psychology and include environmental factors as stressors (Singer & Davidson, 1991). The transactional approach to stress emphasizes the interaction between the individual and elements of his/her...
environment. As defined by Singer and Davidson (1991), the transactional approach defines stress as "the outcome of interactions between the organism and the environment" (p. 37).

The psychological response to stress will be discussed in more depth in section 2.2.2.2. Ecological theory and transactional approaches focus on the reciprocity between the individual and his environment and view the individual as affecting, and being affected by, elements of his environment. In some circumstances, it is easier to understand stress in terms of a response. Based on the categories of stress definitions, the literature would also suggest that there are two generally accepted responses to stress: a physiological response and a psychological response.

2.2.2.1 Physiological response to stress

A physiological response to stress is defined by Kelly, Hertzman and Daniels (1997) as "the set of neural and endocrine adaptations that help reestablish homeostasis" (p. 439). Figure 3.0 visually depicts the physiological response to stress. When faced with a stressor, two interrelated systems respond: the sympathetic-adrenomedullary (SAM) system and the hypothalamic-pituitary-adrenocortical (HPA) axis. In the SAM system, when a situation is encountered, it is labeled as stressful or non-stressful by the cerebral cortex. If the event is appraised as stressful, the information from the cerebral cortex is transmitted to the hypothalamus. The hypothalamus stimulates the sympathetic nervous system. The sympathetic nervous system initiates the adrenal medulla glands, which secrete catecholamines. Arousal of the sympathetic nervous system causes a number of changes in the body including increased blood pressure, increased heart rate, increased sweating, and constriction of peripheral blood vessels (Taylor, 1999).
The HPA axis is activated at the same time as the SAM system. The HPA axis begins with the stimulation of the hypothalamus, which releases corticotrophin-releasing factor (CRF). CRF influences the pituitary gland to secrete adrenocorticotropic hormone (ACTH). Finally, the ACTH affects the adrenal cortex, releasing corticosteroids. Activation of the HPA axis produces increased levels of growth hormones and prolactin, which have been found to contribute to immune-related disorders and psychiatric diseases such as depression (Taylor, 1999).

Figure 3.0  Physiology of stress (Taylor, 1999, p. 173)

2.2.2.2 Psychological response to stress.

The psychological response to stress (see Figure 4.0) is comprised of the appraisal process (Guillet, Hermand, & Mullet, 2002). Appraisal of a situation requires mental judgment, discrimination, and choice of activity (Lazarus & Folkman, 1984). Primary appraisal is a cognitive evaluation of the situation or stressor. During primary appraisal, the
individual assesses the potential stressor to be irrelevant, benign-positive or stressful. Irrelevant appraisals are situations and events that are evaluated as having no implications for well-being, or, are of no value to the individual. Benign-positive appraisals are viewed as positive outcomes that have potential to enhance well-being. Stressful appraisals include situations that include harm/loss, threat, and challenge (Lazarus & Folkman, 1984).

Secondary appraisal is the evaluation of one’s coping resources, and the ability to meet the demands of the stressor (Lazarus, 1966). An evaluation of choices occurs during secondary appraisal. Each option is evaluated and the positive and negative aspects of each option are weighed (Folkman & Lazarus, 1984). The secondary appraisal, or coping process will be discussed in more detail in section 2.3.

![Diagram](image)

**Figure 4.0** Psychological appraisal and the experience of stress (Taylor, 1999, p. 171).

2.2.2.3 Interactions of the physical and psychological responses to stress

The individual physical or psychological approaches to stress alone portray incomplete representations of stress. Ursin and Eriksen (2004) present a cognitive activation theory of stress (CATS), which simultaneously incorporates the physical and psychological responses to stress. As the authors describe, the model presented in Figure 5.0 is a cognitive
theory because CATS assumes that the stress response is dependent upon learned expectancies of the outcomes of the stressor. CATS is also an activation theory because it is based on the body's neurophysiological activation and arousal (Ursin & Eriksen, 2004).

![Figure 5.0 CATS model of stress (adapted from Ursin & Eriksen, 2004, p. 570)]

In the CATS model, the stress process begins with the load (1) where the stressor is evaluated by the brain (2) and may result in a stress response (3, alarm). The response is then fed back to the brain (4). Individuals with a positive expectancy will experience phasic arousal, which is known in the model as "train" and is similar to eustress, a positive form of stress, while sustained arousal may lead to strain. The final loop in the model suggests the brain may alter the perception of the stimulus (5) through previously learned acts or expectancies (Ursin & Eriksen, 2004). Phases one and two of the CATS model are similar to the psychological response to stress where primary and secondary appraisals of stress occur. Phase three of the CATS model incorporates the physiological reactions to stress, as previously depicted in Figure 3.0. Phases four and five feed the reactions back to the beginning of the cycle, where experiences are now considered learned expectancies (Ursin & Eriksen, 2004).
2.2.3 Occupational Stress

In Western society, work is a common and expected aspect of one’s life. Work provides an opportunity to interact with others and ensures income to the household (Siegrist et al., 2003). A job is also a source of stress in most people’s lives. A high-stress job is considered a job that places high demands on the worker while providing little opportunity for control (Jones, Bright, Searle & Cooper, 1998).

Three models of stress are often used to describe occupational stress: Karasek’s job control-job demand model, the effort-reward imbalance (ERI) model, and the Person-Environment (P-E) fit model. The P-E model generally addresses stress and can be applied to any stressful situation. The job control-job demand model and the ERI model are two popular models that look specifically at the characteristics of occupational stress. Studies conducted on each of these two models find that they are suitable predictors of workplace stress, although Karasek’s job control-job demand model is more widely tested and implemented than the ERI model (Siegrist et al., 2003). There exists conceptual and methodological overlap between the two occupational stress models. Both are general models of occupational stress that are measured through self-administered questionnaires (Siegrist et al., 2003). The objective nature of the models differs from the transactional approach suggested by the P-E model. The P-E model includes elements of ecological theory, such as the consideration of individual characteristics as well as the way the individual interacts in his environment.

The job control-job demand model (see Figure 6.0) was developed in the late 1970s as a way to evaluate occupational demands and occupational control as predictors of workplace stress (Munro, Rodwell, Harding, 1998). Although this model takes into account a
number of work characteristics, it is not a transactional depiction of occupational stress. Neither the subjective evaluations of employees’ interactions nor their workplace perceptions are taken into account in the job control-job demand model. Rather, objective measurements of the workplace are measured in the four quadrants of the original model.

Job demands are aspects of work that are organizationally determined. Theorell & Karasek (1996) categorize job demands into psychological demands and physical demands. Psychological demands include deadlines, challenges, expected performance, inter-personal conflict, and task pressures. Physical demands include physical exertion, physical hazards, required pace to complete task, safety issues, exposure to unsafe environments, and dangerous work routines (Munro et al., 1998).

![Job control-job demand model](image)

**Figure 6.0** Job control–job demand model (Theorell and Karasek, 1996, p.11).

Job control is “the ability to exert some influence over one’s environment so that the environment becomes more rewarding or less threatening” (Munro et al., 1998, p. 340).

Control at work includes one’s authority to make decisions, perceived control, freedom and
ability to take breaks, choice of time off, and personalized work areas (Munro et al., 1998). Elsaas and Veiga (1997) found that as job control increases, job strain will decrease. Also, the findings suggest that as the gap between actual and desired levels of job control grows, so too will the level of job stress.

According to Elsaas and Veiga (1997), job demands cause an increased state of arousal in workers. Job control allows workers to use appropriate coping responses to intercept the effects of the heightened arousal. If employees cannot access control in their job performance, they will be unable to channel their arousal in a positive manner, leading to negative psychological and physical consequences. The negative outcomes include anxiety, burnout, emotional exhaustion, reduced performance, absenteeism, turnover, physical complaints, and illness (Elsaas & Veiga, 1997).

Quadrant one of the model, or the category of “high strain” occurs when job demands are high but the worker’s control is low. It is in this quadrant when the most adverse reactions to psychological strain will be noted with symptoms such as fatigue, anxiety, depression, and risk of physical illness (Karasek, 1989). Quadrant two is labeled as an “active job situation.” In the active job situation the worker will experience high levels of psychological demands along with high job control. This situation will lead to what has been labeled desirable stress. The active job situation is associated with high participation rates in socially active leisure and political activities, as well as the feeling of mastery (Theorell & Karasek, 1996). O’Connor and Shimizu (2002) define mastery as a belief that an individual is able to control aspects of her life. The perception of job strain during periods of overload is inhibited by mastery, thereby reducing the psychological impact of stress at work. Low levels of psychological demands with high job control are labeled a “relaxed” job situation.
(quadrant 3), while low control with low demands is referred to as a "passive" job situation (quadrant 4) (Theorell & Karasek, 1996).

Diagonal “A,” which runs from the upper left corner to the lower right corner of the model, is similar to Seyle’s General Adaptation model (see Figure 1.0) where extended exposure to stress is thought to lead to a depletion of resources and eventually illness. Learning occurs along diagonal “B,” which runs from the lower left corner to the upper right hand corner of the model. This path allows the worker to perfect their already successful strategies, or change them altogether if necessary (Theorell & Karasek, 1996).

A revised version of the job control-job demand model includes workplace social support. Karasek and Theorell (1990) suggest that positive social support at work is a significant factor in relieving stress in the workplace. The revised job control-demand model moves closer to a transactional model of occupational stress as it acknowledges the importance of the interactions occurring in the workplace environment. Munro et al. (1998) define workplace social support as “positive, or helpful social interactions available from superiors, management, and co-workers in the workplace” (p. 340). The study conducted by Munro et al. (1998) looked at occupational stress among psychiatric nurses. The findings suggest that the greatest contribution to the health and job satisfaction of the participants came from workplace social support. Radbakm & Altmier (1989) found similar results in their study of burnout and occupational stress among staff at a counseling center. Social support from colleagues and supervisors was associated with lower levels of burnout and on-the-job stress.

Despite the revisions to the job demand-job control model, two significant flaws have been identified. First, the emphasis of the model is on job demand, which under-estimates
the sociological characteristics of the work environment. Second, individual differences, such as buffers and health enhancers, are unaccounted for (Hanson et al., 2000). Johannes Siegrist’s Effort-Reward Imbalance (ERI) model addresses the shortcomings of the job control-job demand model. The ERI model suggests that during stressful periods, healthy functioning is determined by the perceptions and evaluations of social exchanges (Hanson et al., 2000). The model also suggests that a certain degree of work stress provides opportunity for personal growth and is a way to increase self-esteem and self-efficacy. Self-efficacy is described as an individual’s ability to develop a plan of action to meet the demands of a given situation (Jimmieson, 2000). In the occupational setting, the concept refers to “judgments employees make concerning their ability to do what is required to successfully perform their job” (Jimmieson, 2000, p. 264).

This model is more transactional in nature than Karasek’s model as it considers the employees’ interactions with their environment and the personal growth that occurs as a result of these interactions. Siegrist et al. (2003) describe the ERI model as integrating structural and personal components to the study of occupational stress, whereas the job control-job demand model is a “black-box approach to studying work stress” (p. 185). The ERI model also includes the subjective measures of extrinsic and intrinsic effort via assessment of perceptions (Hanson et al., 2000). Extrinsic effort is comprised of workplace situational factors that create job demand. Intrinsic effort refers to personal factors such as motivation (Calnan, Wainwright & Almond, 2000).

Like ecological theory, the ERI model is strongly reliant upon reciprocity. The psychological benefits described in the ERI model depend on a relationship between the worker’s invested effort into a task and the reciprocated rewards. If the effort outweighs the
reward, the individual may experience emotional distress (Calnan et al., 2000). Kompier (2003) explains that rewards are distributed in three different forms: a) money, b) esteem, and c) career opportunities. Despite the transactional elements of the ERI model, it continues to be an objective model of occupational stress (Siegrist et al., 2003).

A third model often referenced in occupational stress literature is the Person-Environment (P-E) fit model, which has also been more broadly applied to include settings beyond the workplace. The P-E model focuses on the relationship between a person and his environment. In this model, it is assumed that an individual has certain personal characteristics that will either fit or not fit with the characteristics of the environment. When the characteristics do not fit, the individual will experience stress (Elsaas & Veiga, 1997). French, Caplan and Harrison (1982) differentiate between two types of fit. First is the demand-ability fit where the relationship considers an individual’s skills and abilities and how the environment challenges or strengthens these abilities. The second fit is referred to as the supply-value fit. This relationship measures the values and needs of the individual and how the environment meets these needs.

When considered in the context of the ecological theory, the P-E model suggests that positive health behaviours are a result of a good fit between the person and his surroundings. Negative health behaviours are linked to a poor fit between the person and environment (Grzywacz & Marks, 2000). Grzywacz & Marks (2000) report poor health is also related to the negative spillover between work-family relationships. The stress experienced from strain in the work-family dyad may lead to hypertension, problem drinking, and lowered levels of mental and physical health.
2.3 Coping

Coping is the second form of appraisal described in Taylor’s (1999) depiction of psychological response to stress (see Figure 4.0). Lazarus (1966) defines coping as one’s ability to meet the demands placed on the individual by a stressful event. Successful coping is important because it is a “stabilizing factor that can help individuals maintain psychosocial adaptation during stressful periods” (Holahan, Moos & Schaefer, 1996, p. 25). Coping is a complex process that is a result of the environment and its demands, as well as one’s personality disposition and individual coping strategies (Folkman & Moskowitz, 2004).

2.3.1 Relationship Between Personality Dispositions and Coping

Researchers have attempted to examine the connection between personality traits and health and wellness. The Five-Factor model of personality is a typology of five stable personality traits, which summarize other, more detailed personality traits (Korotkov & Hannah, 2004). The personality traits included in the Five-Factor model include: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Korotkov & Hannah, 2004). Table 1.0 provides adjectives to describe each personality trait in the Five-Factor model.

Neuroticism is defined as the “proneness to unpleasant emotional experience” (Rusting, 1998, p. 168). Neurotic individuals tend to exaggerate health problems which amplify the effects of stress (Costa et al., 1996). Extraversion is the “individual preference for social interaction and activity” (Rusting, 1998, p. 168). Elevated levels of extraversion are associated with the development of new interests which can minimize the impact of stressors (Costa et al., 1996). Openness to experience is related to divergent thinking, which can lead to creative solutions during stressful periods (Costa, Somerfield & McCrae, 1996).


<table>
<thead>
<tr>
<th>Personality Trait</th>
<th>Adjectives</th>
<th>Reverse Meaning</th>
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<tbody>
<tr>
<td>Neuroticism</td>
<td>Anxious</td>
<td>Emotional Stability</td>
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<td></td>
<td>Self-pitying</td>
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<td>Tense</td>
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<td>Touchy</td>
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<td></td>
<td>Unstable</td>
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<td></td>
<td>Worrying</td>
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<td>Extraversion</td>
<td>Active</td>
<td>Introversion</td>
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<td>Assertive</td>
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<td></td>
<td>Energetic</td>
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<td>Enthusiastic</td>
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<td>Outgoing</td>
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<td></td>
<td>Talkative</td>
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<td>Openness to Experience</td>
<td>Artistic</td>
<td>Conventionality</td>
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<td>Curious</td>
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<td>Original</td>
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<td></td>
<td>Wide Interests</td>
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<td>Agreeableness</td>
<td>Appreciative</td>
<td>Antagonism</td>
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<td>Trusting</td>
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<td>Conscientiousness</td>
<td>Efficient</td>
<td>Undirectedness</td>
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<td>Planful</td>
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<td>Reliable</td>
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<td>Responsible</td>
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<td></td>
<td>Thorough</td>
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(Adapted from Costa et al., 1996, p. 49.)
Korotkov and Hannah (2004) examined the extent to which personality is related to health status and found the Five-Factor model of personality to be related to subjective behavioural health measures. The authors examined the role played by the Big Five personality model on health status, illness behaviour and sick-role behaviour. The findings of the study indicated that individuals who have higher levels of the personality factors (except neuroticism) were more likely to rank their health and wellness as better than those without the personality factors.

Similarly, a review by Myers and Diener (1995) considered the dispositional traits of happy people. The authors suggest that people with the following psychological traits rate themselves as happy even through stressful periods: self-esteem, a sense of personal control, optimism, and extraversion. Self esteem is the “evaluation which the individual makes and ... maintains with regard to himself or herself: it expresses an attitude of approval or disapproval toward oneself” (Turner & Roszell, 1994, p.190). Self-esteem is comprised of reflected appraisal (interpretation of how an individual imagines being viewed by others), social comparison (comparing oneself to others), and self-attribution (judging oneself based on successes and failures) (Turner & Roszell, 1994). Personal control refers to feelings of empowerment, as opposed to helplessness (Myers & Diener, 1995). Optimism is the tendency to view life events positively (Myers & Diener, 1995). Finally, extraversion, as described above, refers to one’s preference for interaction with others and lively activity (Rusting, 1998). Table 2.0 lists and summarizes the psychological traits discussed above. The psychological traits and their relationship to coping and wellness are expanded in more detail in section 2.4.1.1.
Table 2.0

Psychological Traits and Relationship to Coping and Health

<table>
<thead>
<tr>
<th>Psychological trait</th>
<th>Relationship to coping and health</th>
<th>Authors cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>Related to successful coping and a happy disposition; reported as being central to the prevention of mental illness; protect individuals from strain and supports positive well-being.</td>
<td>Myers and Diener, 1995</td>
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<tr>
<td></td>
<td></td>
<td>Turner &amp; Roszell, 1994</td>
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<td></td>
<td></td>
<td>Schiralki &amp; Brown, 2001</td>
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<td></td>
<td></td>
<td>Kalimo et al., 2002</td>
</tr>
<tr>
<td>Mastery</td>
<td>Belief one can control aspects in life; feeling of empowerment during stressful periods; high levels of mastery related to problem-focused coping; is related to successful coping and a happy disposition.</td>
<td>O’Connore &amp; Shimizu, 2002</td>
</tr>
<tr>
<td>Competence</td>
<td>Feelings of confidence that the individual has the needed skills and is able to meet challenges; protect individuals from strain and supports positive well-being;</td>
<td>Kalimo et al., 2002</td>
</tr>
<tr>
<td>Optimism</td>
<td>Tendency to view life events positively; is related to successful coping and a happy disposition; buffers the effects of stress.</td>
<td>Myers and Diener, 1995</td>
</tr>
<tr>
<td>Sense of coherence</td>
<td>Protect individuals from strain and supports positive well-being.</td>
<td>Kalimo et al., 2002</td>
</tr>
</tbody>
</table>

2.3.2 Coping Strategies

The coping literature identifies a number of approaches to coping, including the regulation of emotion. The regulation of emotion refers to traits that “attempt to eliminate, change, or maintain one’s emotional state by attending to, or avoiding emotional stimuli” (Rusting, 1998, p. 168). In the context of emotional regulation, individuals may be categorized as “repressors” or “sensitizers.” Repressors are people who divert attention away from threatening stimuli, while sensitizers are individuals who constantly monitor their surroundings for the potential of threatening stimuli (Rusting, 1998). Conversely, positive
emotions are important facilitators of positive adaptation and adjustment during threatening or stressful periods (Folkman & Moskowitz, 2000). During stressful periods, positive emotions sustain coping efforts, provide a break from the stress, and restore depleted coping resources (Folkman & Moskowitz, 2000). Positive emotions often present themselves through the process of positive reappraisal, which is a process through which people focus on positive elements of a stressful event or situation (Folkman & Moskowitz, 2000).

Discovering opportunities for growth, perceiving actual personal growth, and seeing how one’s efforts can benefit others are included in the positive reappraisal process (Folkman & Moskowitz, 2000).

O’Connor and Shimizu (2002) differentiate between problem-focused and emotion-focused coping. Problem-focused coping refers to behaviours that manage the stressor, such as making lists of tasks, exercise, and scheduled breaks. Problem-focused coping is more likely to occur when the individual under stress feels he/she is in a situation he/she can control and alter. Emotion-focused coping includes behaviours that deal with the emotions caused by the stressor. This form of coping is more likely to occur when an individual is in a situation he/she perceives as being beyond his/her control. Emotion-focused coping has been associated with a poorer state of mental health, while problem-focused coping is linked to a more positive psychological state. Individuals who adopt a problem-focused approach to coping have been found to have an internal locus of control (believe that their situations are a result of their own behaviours and capabilities) and a high sense of mastery (O’Connor & Shimizu, 2002).

Taking a slightly different approach, Holahan et al. (1996) differentiate between approach and avoidance coping styles. Approach coping includes problem-focused coping
behaviours described above as well as information seeking. Avoidance behaviours, on the other hand, include acts of denial and withdrawal. Individuals who utilize an avoidance coping style tend to demonstrate symptoms of greater psychological distress when compared to those who use approach coping styles. People who rely on approach coping are also noted to adapt better to life stressors and show reduced symptomology of depression (Holahan et al., 1996).

Baker and Williams (2001) created a list of six factors associated with social problem solving, which encompasses many of the different coping characteristics described above. Social problem solving is a “cognitive-behavioural process by which individuals attempt to identify and implement effective means of coping with a problematic situation” (p. 219).

The six factors associated with social problem solving are:

1. Problem solving confidence: a belief in one’s ability to solve problems.
2. Approach style: a tendency to approach problem situations and confront them directly.
3. Avoidance style: a tendency to postpone dealing with problem situations.
4. Problem solving control: a belief in control of the situation.
6. Creative style: planning and considering alternatives to problem situations.

(Baker & Williams, 2001, p. 220)

2.4 Health and Stress

The World Health Organization (WHO) holistically defines “health” as, “physical, mental, social, and spiritual well-being, not merely the absence of disease or infirmity” (World Health Organization, 2004). This definition acknowledges the “total person” not just
the absence of disease or illness. A review of the literature on stress and coping reveals that many studies have specifically examined the relationship between stress and one element of health (e.g., stress and physical health, stress and the role of social support). However, few studies focusing on occupational stress were found that examined the relationship to a holistic definition of health. As the following review indicates, the stress-coping process affects each of the elements of health. The inter-relationship of the person and the environment leads to direct effects of stressors on the psychological, physiological, social and spiritual health of the individual.

2.4.1 Dimensions of Health

There are four dimensions of health (psychological, physical, social and spiritual) that must be in balance for the individual to experience overall wellness. Each of the following sections will examine research that has lead to a deeper understanding of the effects stress has on the dimensions of health.

2.4.1.1 Psychological health and stress.

Depression and anxiety are two of the most frequently reported mental illnesses related to stress. The prevalence rate of depression among the general population is one in five, while the rate for anxiety is one in four (Schiraldi & Brown, 2001). In addition, there are a number of psychological factors determined to have a relationship to stress and coping, including: self esteem, mastery, competence, and exercise (Ensel & Lin, 2004; Kalimo, Pahkin & Mutanen, 2002; Schiralki & Brown, 2001). See Table 2.0 for a list and summary of psychological factors contributing to mental well-being.

According Ensel and Lin (2004) there are psychological and social resources that enable an individual to cope with stress and avoid mental illness (e.g. depression and
anxiety). Social resources will be discussed in section 2.4.1.2. Psychological resources include self-esteem, mastery, and competence. Self-esteem has been reported as being central to the prevention of mental illness and is defined as “a realistic, appreciative opinion of self, based upon a sense of unconditional human worth, unconditional love and acceptance, and the process of realizing potential” (Schiralki & Brown, 2001, p. 58). Adopting and developing high self esteem is related to successful coping and a happy disposition (Myers and Diener, 1995).

O’Connor and Shimizu (2002) describe mastery as the belief that an individual has aspects in his life that he is able to control, while competence is referred to as “the individuals’ feelings of confidence that s/he has the needed … skills and abilities” (Kalimo et al., 2002, p. 228). High self-esteem, mastery and competence enable the individual to view their situation as controllable, and therefore easier to manage (Kalimo, et al, 2002). Chang (1998) examined the moderating role of another psychological resource - optimism - and found that optimism is a resource that also buffers the effects of stress.

In a longitudinal study by Kalimo et al. (2002), the authors examined stable personal resources as long-term predictors of well-being. The findings of this study demonstrated that strong psychological resources, especially a strong sense of coherence, high self esteem, and a positive sense of competence, protect individuals from strain and support positive well-being. The authors define a sense of coherence as “a personal resource which refers to global orientation towards one’s inner and outer environment” (p. 227-228). In the study by Kalimo et al. (2002), sense of competence is a major determinant of how one acknowledges and copes with stressful situations.
The natural language text is not visible in the image provided.
Studies also discuss the relationship between mental health, physical health, and aspects of lifestyle. Ensel and Lin (2004) studied the effects of exercise on psychological distress, and found that increased exercise is associated with a rise in psychological resources such as self-esteem. Morimoto, Takeshita, Imoue-Sakurai, and Maruyama (2001) investigated the relationship between lifestyle, mental health and immunity. Lifestyle was measured on the prevalence of cigarette smoking, alcohol consumption, eating breakfast, hours of sleep, hours spent working, exercise, stress, and diet. The authors found that those who rated their lifestyle poor to moderate also rated their mental health as unstable and showed lowered levels of Natural Killer cells. Natural Killer cells are found within the lymphatic system and act as a defence mechanism against certain types of cancer, such as melanoma (Morimoto et al., 2001). Participants with healthy lifestyles demonstrated high levels of Natural Killer cells and reported stable mental health. These findings speak to the connection between stress, physical and mental health and suggest that mental health is an important factor in overall well-being (Morimoto, et al., 2001).

2.4.1.2 Social health and stress.

Several sources identify one’s social health as having an important effect on stress and coping. Social relationships play six main functions, including the provision of: a) a source of intimacy, b) a sense of belonging, c) nurturant behaviours d) reassurance of worth e) assistance, and f) guidance and advice (Berkman, 1984). As Ensel and Lin (2004) described, social resources are used to cope with stressful situations. Two terms associated with social resources that are often used interchangeably are “social support” and “social networks.” These terms, however, are distinct in nature. Social networks are defined as: “the structural aspects of social relationships. These networks are the channels through which
pragmatic help as well as emotional and psychological supports can be exchanged between individuals” (Achat et al., 1998, p. 735). Social support, more specifically, is obtained through one’s social networks (Berkman, 1984). Lazarus and Folkman (1984) define social support as “the nature of the interactions occurring in social relationships, especially how these are evaluated by the person as to their supportiveness” (p. 249). Social support comes in the form of emotional concern, instrumental aid through deeds and material goods, information exchange, and appraisal (Berkman, 1984).

Social support may be further understood in terms of subjective and objective support. Subjective, or perceived social support, refers to “the extent to which an individual believes others value, care for, and desire to aid her or him” (Pierce, Sarason & Sarason, 1996, p. 436). Perceived social support reflects the assessment of social relationships (Pierce et al., 1996). Objective social support reflects the structural aspects of support networks described above by Achat et al (1998).

Not all social networks, however, are supportive or healthy (Berkman, 1984). As Lazarus and Folkman (1984) state, “we must bear in mind that social relationships create problems which comprise a significant share, probably the lion’s share, of the sources of stress in life” (p. 248). Hagihara, Miller, Tarumi, and Nobartamo (2003) studied the negative impacts of social relationships. The authors found that social networks play a role in encouraging alcohol consumption as a coping mechanism. The authors warn, however, that other conditions surrounding the stressful situation must be taken into consideration when examining alcohol consumption as a coping mechanism (Hagihara, et al., 2003).

To uphold the positive effects of social supports, Miyazaki et al., (2003) examined the correlation between social support and immunity. The researchers found that social support
[Text content is not legible]
has an effect on Natural Killer cells, suggesting that increased social support is associated with a naturally increased immunity. Achat et al. (1998) investigated the relationship between social networks and mental functioning during stressful periods for women. The findings showed that isolated women had lower mental functioning during stressful periods. A strong positive association was also found between the number of social networks and quality of life scores during stressful events.

Bellman, Forester, Still, and Cooper (2003) examined social support, occupational stress, and gender differences and found that the role of social support is different for males and females. The findings indicate that social support acted as a moderator on the effects of stressors on energy levels, job satisfaction, and organizational security for all employees. A significant relationship between social support and organizational commitment was found for males only; while women showed a significant interactional effect between social support and a positive state of mind. Differences exist not only between men and women, but also between social classes. Elliott (2000) investigated the relationship between socio-economic status and mental and physical health. The findings indicate that social support is more beneficial to mental and physical health for those of higher socio-economic status than for individuals of lower socio-economic status (Elliott, 2000).

Of the different hypotheses proposed by scholars regarding the role of social support in the health process, perhaps the most popular is the buffer hypothesis. The buffer hypothesis states that social support and social networks affect mental health by buffering or intervening on the negative effects of stressors (Olstad, Sexton, Saoguard, 2001). Mixed findings have been noted when researchers examine the buffering effects of social support. Olstad et al. (2001) investigated the buffering effect of social support in relation to specific
stressors and mental distress. The buffering effect was noted as social support appeared to intercept the negative influences of stress. The effect was stronger for women than for men, similar to the findings of the Bellman et al. (2003). When Olstad et al. (2001) examined stressors individually, work stress was found to be the only stressor significantly buffered by social networks and social support. Monroe and McQuaid (1994) describe how social support alone may not have the intervening effect on stress as suggested by other scholars. The authors suggest that social networks and social support may erode under stress, as social networks may not be able to meet the increased demands of the stressed individual.

2.4.1.3 Physical health and stress.

A definitive statement linking stress to physical health is not yet possible. Stress has been considered only one factor in the environment that can influence a person’s physical health. In a review of the literature, Baum & Posluzny (1999) describe the physiological effects of stress, including the relationship stress has with cardiovascular disease and the immune system. Prolonged exposure to stress was noted as being associated with wear and tear on arteries and coronary vessels. Stress has also been associated with ischemic episodes, heart attacks, increases in cholesterol, lipids, and oxidative damage to the heart (Baum & Posluzny, 1999). Many of the cardiovascular risks linked to stress are a result of the release of catecholamines (James & Brown, 1997). Catecholamines are a combination of epinephrine and norepinephrine. These hormones are released as part of the physiological response to stress, as described earlier (see figure 3.0). Catecholamines prepare the individual for the fight or flight response to stress by increasing blood pressure, heart rate and mental activity as well as the mobilization of cellular metabolism and energy stores. If an individual is exposed to these hormones over a prolonged period of time, cardiovascular and
other degenerative diseases may result (James & Brown, 1997). The immune system is also sensitive to mood fluctuations and is responsive to changes in behaviours due to stress. Research has found a decrease in immune activity as a result of increased exposure to stress (Baum & Polynsky, 1999).

As suggested by Kelly, Hertzman and Daniels (1997), establishing the link between stress and physical health is complicated. A contributing factor to heart disease that is also associated with stress is diet. Stress, and the related negative moods, have been found to lead people to overeat and to consume “comfort food” that are high in fat, salt or sugar (Baum & Polynsky, 1999). While exercise has been found to be an effective coping mechanism for managing stress and has a positive impact on the physical health of an individual, studies have also shown that increased stress is associated with decreased physical activity (Baum & Polynsky, 1999).

2.4.1.4 Spiritual health and stress

The literature linking spirituality to other dimensions of health has been growing in the last decade. Although spiritual health is a recent addition to the WHO’s definition of health (Witmer & Sweeney, 1992) and research examining the relationship between spirituality and health has begun more recently, the link was not foreign to many early scholars. Jung (as cited in Hodges, 2002) is quoted as stating that without an “inner transcendent experience, humans lack the resources to withstand the blandishment of the world” (p. 109). Like many phenomena, spirituality has proven difficult to define (Daaleman, Kuckelman-Cobb, Frey, 2001; Pardini, Plante, Sherman, & Stump, 2000). Much confusion lies in distinguishing spirituality from religion. Religion and spirituality are similar in that they both represent a search for the “significance in the realm of the sacred”
(Lawler & Younger, 2002, p. 349). However, where religion incorporates traditions and rituals associated with an institution, spirituality is more of an individual experience, (Hodges, 2002).

According to Hodges (2002) spirituality involves four dimensions, including: a) meaning in life, b) intrinsic values, c) transcendence, and d) a community of shared values and community support. Meaning in life is associated with Maslow’s self-actualization where one experiences “unity and recognition of the sacred in life” (p. 109). Intrinsic values are a system of values that becomes the foundation for one’s behaviour. Transcendence refers to a notion of accepting a greater power beyond humans. Finally, the community of shared values and common support refers to sharing one’s beliefs with others in a community of some form (Hodges, 2002).

Much of the recent literature related to health and spirituality is theobiological; that is, the focus of the research has been on the connection between spirituality and biology (Lawler & Younger, 2002). Epidemiological studies have shown a relationship between higher levels of spirituality and lower levels of cardiovascular disease, hypertension, and cancer (Pardini et al., 2000). A greater sense of spirituality has also been associated with lower levels of cholesterol and triglycerides (Doster et al., 2002). Doster et al. (2002) link spiritual and religious activity to increased longevity, decreased mortality, and reduced rates of heart attacks. Research also indicates that individuals with stronger spiritual and religious beliefs tend to have better long-term health and better health outcomes following surgery (Doster et al., 2002).

Spirituality as it relates to psychological well-being is associated with an increased sense of purpose and meaning; which in turn, leads to greater resiliency and resistance to
illnesses associated with stress (Lawler & Younger, 2002). Pardini et al. (2000) found that higher levels of spirituality and religious participation were associated with a more optimistic life orientation, greater perceived social support, higher resistance to stress, and lower levels of anxiety in participants overcoming substance abuse. Transcendent spirituality has been linked with global appraisals of well-being (McBride, Arthur, Brooks, & Pilkington, 1999) and an increased sense of peace and courage (Doster et al., 2002).

Daaleman et al. (2001) proposed a conceptual framework of health related spirituality (see figure 7.0). As the diagram depicts, a change in functional status is the starting point of the model. A change in functional status includes changes in physical health as well as disruptions in social and psychological contexts. The change in functional status leads to information gathering/processing and interpretation/understanding. Both of these tasks are influenced by the individual’s core beliefs. Included in the function of core beliefs are characteristics of the social structure, traditions, and previous experiences. The core beliefs, information gathering/processing, and interpretation/understanding all influence life scheme and positive intentionality, which the authors consider to be the main elements of the term “health-related spirituality” (Daleman et al., 2001, p 509). As depicted in this model, positive intentionality is very similar to Bandura’s concept of self-efficacy. In turn, life scheme refers to finding meaning in every situation. Life scheme and positive intentionality lead to agency beliefs. Agency beliefs are beliefs related to the possession and access to resources and include luck, ability, effort, as well as access to influential individuals. To complete the model, agency beliefs lead to a subjective rating of well-being.
Progression through this model is very similar to the ecological theory and the transactional approach to stress, which consider personal and environmental factors in the stress relationship. Each phase of the Daaleman et al. (2001) model considers the interactions of the individual – including her perceptions, experiences, and beliefs - with environmental characteristics. The reciprocity of these interactions ultimately leads to a subjective evaluation of well-being.

2.4.2 Determinants of Health

In addition to the dimensions of health, other models exist that help to describe the various facets affecting health. The interrelationship between the different aspects of wellness is acknowledged by Custer (1985) who states “when great stress demands are placed on the body, ... adjustments are made at the expense of other important physiological functions such as maintaining the immune system of mental/emotional equilibrium” (p. 216).

In her article, Custer reports the internal and external factors that impact a person’s perception of stress, including: age, education, marital status, place of occupancy, and socio-economic status (SES). Those who are younger, have more education, are unmarried, and
live in densely populated areas report more frequent and stressful life events. Also, life changes such as employment and relationship changes among individuals of lower SES tend to be more intense than changes for those of higher SES (Custer, 1985). The Organization for Economic Cooperation and Development (OECD) found that the amount of money spent by a country on health care was only weakly correlated to health outcomes (Vingilis & Sarkella, 1997). Similarly, The Ontario Premier’s Council on Health Strategy (1990) stated that the most important determinants of health and well-being are social, economic and environmental factors. Despite this statements, the trend in the Ontario public is a belief in the biological and genetic determinants of health. Such a strong belief in scientific factors is due to the medical advances that have evolved in the past century (Vingilis & Sarkella, 1997).

Drawing from fields of psychology, anthropology, sociology, theology, and education, Witmer and Sweeney’s (1992), Wheel of Wellness and Prevention is another model that identifies characteristics of a healthy person (see Figure 8.0). With an emphasis on the “wholeness in mind, body, spirit, and community,” the characteristics of healthy people are described under the five life tasks of: a) spirituality, b) self-regulation, c) work, d) friendship, and e) love relationships (Witmer & Sweeney, 1992, p. 1). As shown in Figure 8.0 health is affected by a number of life forces, including: family, religion, education, community, media, government, and business/industry (Witmer & Sweeney, 1992). This model of wellness focuses on the individual and acknowledges the external forces affecting his/her wellness, but does not take into account the different environments in one’s life nor the interactions with these environments.
Recent medical developments suggest emotional processes such as stress influence nearly all bodily systems and can be linked to a number of diseases (Baum & Posluszny, 1999). The chronic health effects of stress on firefighters have been an intense area of research since the 1980s (Guidotti & Clough, 1992). Firefighters engage in a uniquely stressful occupation, and therefore differences from our general understanding of stress and coping can be found. According to Beaton, Murphy, Johnson, Pike and Corneil (1999), "emergency workers are ... a self-selected occupational group and may not be representative of the general population in terms of their personalities nor their coping strategies" (p. 294).

The psychological stress experienced by firefighters includes witness to pain, injury, and strong emotions. Guidotti and Clough (1992) report that the loss of a victim, especially a child, has been identified by firefighters as the most stressful experience a firefighter can endure. In a study by Beaton et al. (1998), the major task-related stressors were divided into five categories: a) catastrophic injury to self or other firefighter; b) gruesome victim incidents; c) helping seriously injured and vulnerable victims; d) minor injury to self; and e)
exposure to death and dying. Smith, Manning, Petruzzello (2001) found that strenuous-
training drills also lead to psychological and physiological distress. The authors found that
the distress caused by training drills could potentially lead to impaired cognitive functioning
in real life situations.

Job-related stressors for firefighters also include concerns with job skills, job security,
wages, benefits, and conflicts. Additionally, the high demand/low control characteristics of
firefighting have been identified as potentially creating an unhealthy high-strain combination
and have been related to an increased risk of cardio-vascular disease (Murphy, Beaton, Pike
& Johnson, 1999). The hierarchical chain of command within fire departments, exposure to
trauma, changes in work-related responsibilities (such as a change of crew), and extended
periods of sedentary time off were also identified by Corneil et al. (1999) as work-related
stressors that contribute to a decline in cardio-vascular health among firefighters. Other
studies focus on specific diagnoses such as cancer, cardiovascular disease, respiratory
problems and PTSD and their prevalence among firefighters (Murphy, Beaton, Pike &
Johnson, 1999). Stress and stress-related symptoms are a concern for firefighters because
they can interfere with job performance, impact the length of employment, negatively affect
health status after retirement, and have high economic costs to both the employer and the
employee (Corneil et al., 1999).

The United States Fire Administration (USFA) released a retrospective study of
firefighter fatalities from 1990-2000. This study examined the causes of death for on-duty
firefighters in the United States, and found that 44% of on-duty deaths are due to heart
attacks, followed by work-related trauma at 27%. The study also found that firefighters over
the age of 35 are more likely to die of medical causes than trauma while on duty (Fire
Engineering, 2002). In 2001, the International Association of Fire Fighters (IAFF) reported “firefighters experience more occupational fatalities due to heart attack than persons in any other profession” (Kay, Lund, Taylor, & Herbold, 2001, p. 807).

2.5.1 Psychological Distress and Posttraumatic Stress Disorder Among Firefighters

Firefighters are exposed to trauma on a regular and frequent basis, which may increase the risk of PTSD. However, the rates of PTSD among firefighters are unclear. According to Murphy et al. (1999), previous research reports PTSD rates among firefighters between 16% and 50%. In 1999, Corneil et al. (1999) examined factors that potentially influence PTSD symptoms among firefighters. The study found that the number of years of service has a positive relationship with PTSD symptoms, while marital status (i.e., married versus single) and being of a higher supervising rank were protective factors against symptoms of PTSD.

Symptoms of PTSD in emergency responders include recurrent dreams, feelings of detachment, dissociation, anger, irritability, depression, memory impairment, difficulty concentrating, somatic disturbances and alcohol and substance abuse (Regehr et al., 2002). In a later study, Regehr et al. (2003) cite external factors that can impact the chronicity of PTSD symptoms including life stressors, previous mental health problems, social supports and relational capacity.

In the 2003 study, Regehr et al. examined the symptoms of PTSD among new firefighter recruits as well as experienced firefighting veterans. The study revealed that new recruits had fewer PTSD symptoms than their experienced counterparts. The study also found that veterans reported significantly less social support than new recruits; however, the
findings were inconclusive as to the relationship between social support and PTSD symptoms among firefighters.

Revicki and Greshon (1996) examined work-related stress and psychological distress among paramedics. The study revealed that work-related stress was significantly related to psychological distress. More specifically, low occupational social support and authoritative supervisory styles lead to increased levels of depression. Regehr et al. (2002) found that paramedics who had reported taking a mental health leave also reported high or severe levels of post-traumatic stress symptoms. The authors found that personality factors were better predictors of coping ability among paramedics and emergency workers than taking mental health leaves after traumatic calls. Specifically, personality traits of alienation, insecurity, egocentricity, and social incompetence were related to mental health leave among the participants (Regehr, et al., 2002).

2.5.2 Coping Among Firefighters

Brown, Mulhern and Joseph (2002) examined the coping behaviours of firefighters in Northern Ireland during political unrest. The authors found locus of control to be an important indicator of psychological distress (Brown et al., 2002). Internal locus of control (as opposed to an external locus of control) is positively associated with more problem-focused coping strategies among firefighters exposed to traumatic events (Brown et al., 2002). The findings of this study indicate that firefighters exposed to prolonged situations of unrest have increased psychological distress, which is associated with greater incident-related negative emotions, external locus of control, reduced task- and emotion-focused coping, and increased avoidance coping (Brown et al., 2002).
Alcohol consumption as self-medication is thought to be a common coping mechanism among firefighters (Brown et al., 2002; Murphy et al., 1999; North, et al., 2002). The over-reliance of alcohol for self-medication as well as social purposes is related to the stressful nature of firefighting (Murphy et al., 1999). Murphy et al. (1999) note that social drinking is more common for workers whose job requires teamwork, including firefighters. In the study of rescue personnel involved with the Oklahoma City bombing, North et al. (2002) found that rescue workers were more likely to turn to increased alcohol consumption to cope with the tragedy rather than seeking mental health treatment or medication. Second to social support, North et al. (2002) found that alcohol consumption was the most common coping strategy used by rescue personnel.

Karasek’s revised job control-job demand model states that social support in the workplace has a buffering effect on occupational stress (Munro et al., 1989). However, the buffering effect of social support has been inconsistent in the research of firefighters. Regehr et al. (2003) found that experienced firefighters have lower levels of social support than new recruits. The authors note that lower levels of social support are a concern; however, they are unable to explain this finding. Murphy et al., (1999) cited contradicting literature stating that firefighters reported high levels of social support, which had a buffering effect against stress, job dissatisfaction, and negative health outcomes (Murphy et al., 1999).

Regehr et al. (2003) consider cognitive appraisals of self-efficacy to be an important factor in reducing stress among firefighters. Self-efficacy is “a mediating process that involves expectations that one can solve problems and meet new challenges” (Regehr et al., 2003, p. 189). Positive appraisals of self-efficacy were associated with lower levels of stress symptomology and reduced symptoms of depression among firefighters (Regehr et al., 2003).
In an examination of psychological distress as it relates to social problem solving and work stress among British firefighters, Baker and Williams (2001) found that individuals who use effective problem solving techniques experience less psychological distress than those who are ineffective problem solvers. The findings show that work stress and problem solving appraisals accounted for 49% of the variance in psychological distress scores among the participants.

Fire departments have implemented programs to help employees cope with stressful and traumatic situations associated with the occupation. Harris, Baloglu, and Stacks (2002) studied the effectiveness of critical incident stress debriefing (CISD) programs among firefighters. Critical incidents include personal loss or injury, traumatic stimuli, mission failure, human error, many difficult calls in a short period of time, high media attention, or calls involving contact with dead or severely injured children. CISD is a “peer counseling group procedure with psycho-educational components to provide information on various stress reactions following exposure to a critical incident” (Harris et al, 2002, p. 223). The authors of the study found that firefighters with previous mental health histories are more likely to perceive an exposure as stressful and will be more likely to seek and benefit from CISD.

According to Tangherlini (2000), many emergency responders are hesitant to seek help from CISD programs for fear of colleagues viewing them as weak. Tangherlini (2000), who focuses on story telling of paramedics, reports that informal story telling with other paramedics and emergency workers is a common coping practice, allowing the storyteller to re-examine the situation and their own actions. Through story telling, paramedics are able to achieve closure and make meaning of the situations without the formalities of CISD.
CHAPTER 3.0: METHODS

3.1 Introduction

The current study of firefighters in South-Central Ontario was a qualitative study using a constructivist grounded theory approach. The study was framed in a transactional and ecological approach to understand the response to stress and coping among individuals in high stress occupations. Within ecological theory the emphasis is on a transactional process, which relies on the reciprocity between the individual and his/her environment (Singer & Davidson, 1991; Ungar, 2002). In part, this study was an examination of perceptions and cognitive appraisal of stressful situations in a high stress occupation. According to Lazarus and Folkman (1984), cognitive appraisal can be understood as “the process of categorizing an encounter and its various facets, with respect to its significance to well-being” (p. 31). In addition, insights were sought into the relationship between stress and health, as understood in a holistic sense.

Where positive work environments have been linked with positive health outcomes, negative outcomes are considered related to poor working conditions (Ettner & Grzywacz, 2001). Firefighting was chosen as the high-stress occupation to be examined in this research due to the unique job elements that characterize the occupation. Firefighters face stress and trauma on a regular basis while on duty (Murphy et al., 1999). The manner in which firefighters perceive and cope with stressful situations can affect job performance, impact the length of employment, have a negative effect on health status after retirement, and have high economic costs to both the employer and the employee (Corneil et al., 1999).

Therefore, the purpose of this grounded theory study was to develop an understanding of how firefighters perceive and cope with stressful experiences and the
null
**relationship between this process and health.** Specifically, this study answers the following research questions:

1. **What is perceived as a stressful experience for firefighters?**
2. **How do firefighters perceive stressors associated with occupational stress?**
3. **What are the coping mechanisms for firefighters?**
4. **What is the relationship between the stress-coping process and health?**

### 3.2 Qualitative Research Methods

The primary focus of this research was on the participants' perceptions and appraisals of stress and coping, and the relationship to health. Therefore, it was fitting to adopt a methodology that allowed the participants to speak for themselves without any manipulation, preconceptions or controls by the researcher (Patton, 2002). Consequently, a qualitative method was employed. As Luborsky (1994) notes:

> Among its many notable benefits is [qualitative research’s] direct representation of an individual’s own point of view and descriptions of experiences, beliefs, and perceptions. [...] The qualitative study of themes gives more weight to the voices and experiences of the individual consumer or patient than to the expert observer or medical researcher. (p. 190)

As Luborsky suggests, qualitative researchers accentuate situational and structural contexts; as opposed to many quantitative researchers, whose focus are more on multiple variables and less on context. As a consequence, qualitative researchers tend to be less concerned with cross-comparison and more involved with a single situation, organization or institution (Strauss, 1987).

A review of literature reveals that the majority of research on occupational stress is quantitative in nature (Achat et al., 1998; Bellman, Forester, Still, & Cooper, 2003; Hagihara et al., 2003). The two most popular models of occupational stress are the job control-job
demand model and the effort-reward imbalance (ERI) model, which have proven to be reliable models for the measurement of occupational stress (Siegrist et al., 2003). These models, however, do not take into consideration unique personal characteristics and their effects on an employee’s ability to manage work-related stress. Where the job control-job demand and ERI models attempt to identify specific variables in the measurement of occupational stress, the person-environment (P-E) fit model suggests the use of a qualitative approach that will help to illuminate the transactional nature of stress. The P-E model assumes that an individual possesses certain qualities that will either fit, or not fit, with the characteristics of the environment. When the characteristics do not fit, the individual will experience stress (Elsaas & Veiga, 1997). According to Lazarus and Folkman (1984), “what is important [in the perception of stress] is the ‘psychological situation’, which is a product of the interplay of both environment and person factors” (p. 23).

Prior research on the health of firefighters has often been epidemiological and statistical in nature, focusing on measurement of cardiovascular disease, cancer, and depression (Baker & Williams, 2001; Brown, Mulhern & Joseph, 2002; Murphy et al., 1999; Regehr, et al., 2002; 2003). Studies that enable firefighters to talk about their own experiences and perceptions of their job are rare. One notable exception is a study by Tangherlini (2000) who explored perceptions of stressful situations through the storytelling of inner-city paramedics. Yarnal and Dowler (2003/2004) also interviewed volunteer firefighters to better understand firefighting as serious leisure, however the perceptions of stress and coping were not the focus of the study. The current study enabled firefighters to a) describe how stress and trauma are unique to their occupation, b) their perception of stressful situations, and c) the relationship between the stress-coping process and health.
The specific tradition of qualitative research employed throughout this study was grounded theory. According to Streubert and Carpenter (1999), the purpose of grounded theory "is to explore social processes with the goal of developing a theory" (p. 105). As Straus (1987) explains, grounded theory it is not a specific method of conducting research; rather it is a style of performing qualitative analysis, involving open, axial, and selective coding. To employ grounded theory, the researcher begins with a desire to learn about a social situation or setting, and from this desire, the researcher will inductively explore the phenomena (Loftland & Loftland, 1995).

Grounded theory is an approach to research that allows for both inductive and deductive methods. Inductive methods are seen in the emerging theory that has been uncovered from the data (Strubert & Carpenter, 1999) and allow for creativity and freedom for the researcher (Morse, 2001). The deductive methods are apparent in the empirical testing of the theories that emerged through inductive methods (Streubert & Carpenter, 1999).

Morse (2001) identifies a list of characteristics that identify a particular qualitative study as being "grounded theory":

1. The study will have a focus on identifiable stages and phases.
2. The study will use indicators of action and change.
3. The study will have a basic social or psychological process that ties the stages or phases together.
4. The synthesis of data will appear through the study's concepts and relational statements (p. 2).
The goal of investigations utilizing a grounded theory approach is to uncover theoretical explanations about a specific phenomenon (Streuber & Carpenter, 1999). In this study the phenomenon explored was the transactive nature of firefighter perceptions of stress and coping, and the relationship to health. Theories uncovered through the grounded theory process are typically mid-range theories focusing on behavioural concepts (i.e., coping) or behavioural phenomenon (i.e., stress) (Morse, 2001). Grounded theory aims to uncover a theory rooted in authentic experiences; therefore the methodology of the researcher will take him/her into the real world (Patton, 2002). In this study, the real world setting was a fire department in a South-Central Ontario city.

Allowing the participants to reveal their stories and truths is a specific form of grounded theory called “constructivist grounded theory” (Patton, 2002). The constructivist approach to grounded theory examines the characteristics of the phenomena, as defined by the participants. As described by Neimeyer and Neimeyer (1993), “constructivism is founded on the premise of meaning making; being human entails active efforts to interpret experiences, seeking purpose and significance in the events that surround us” (p. 4).

Similarly, Lazarus and Folkman (1984) acknowledge that individuals and groups of people differ in their susceptibility to stress, as well as their interpretations and reactions to certain events. This study explored the perceptions and realities of firefighters in relation to the events of their occupation.

Laungani (2002) examines culture-specific stressors and trauma and the ways in which cognitive and emotional appraisals vary by culture. Based on the findings of Laungani’s (2002) study, it was anticipated that, due to the culture of firefighting, firefighters’ perceptions of stress and coping would be different than the perceptions and
experiences of the general population. Due to the expected inconsistencies of perceptions between the general population and firefighters, the constructivist approach to grounded theory allowed the truths of firefighters to emerge throughout the course of the research.

3.3 Participant Selection

Twelve participants were selected from a list of 15 firefighters who volunteered to participate in the study. All participants worked for one department in South-Central Ontario. A department in South-Central Ontario was sought for reasons of convenience, given limitations in budget and time. The selection of the Fire Department was also based on accessibility and willingness of the Department to participate in the study. The researcher approached the Deputy Fire Chief of the Fire Department in the Fall of 2004\(^1\). During a face-to-face meeting with the Deputy Chief, the purpose of the research was explained, and he was given the opportunity to have any concerns and questions clarified, as they relate to the study.

Originally, participants were to be selected from a variety of fire halls throughout the City. However, during a conversation with a participant early in the selection phase, it was explained that all firefighters have experience working in all the fire halls, especially the busiest fire hall, “Downtown.” The participant explained that all new firefighters are stationed Downtown and will be transferred to “outstations” after they have gained some experience. With this information, the station in which the firefighters were stationed became less important, and all volunteers were considered for the study, provided they met the minimum sampling criteria.

\(^1\) At the time this research was conducted, the Fire Department was without a Fire Chief and remained without a Chief for 14 months. Therefore, the Deputy Chief was approached for approval of the research.
Participants were recruited through a variety of methods, including a poster and letter of recruitment displayed at the fire halls (see Appendix B) and through a contact of the Fire Department. A participant of the study also took the initiative to collect names of firefighters who were interested in participating in the study and passed their information on to the researcher. The researcher also made personal visits to the fire halls to talk with interested firefighters and answer questions and concerns from potential participants.

Names of potential participants were gathered, however the final participants were selected using a purposeful sampling technique, specifically maximum variance sampling. Purposeful sampling involves selecting cases that are information-rich, because “studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations” (Patton, 2002, p. 230). Establishing minimum criteria for participant selection ensures that participants have information to contribute to the study (Patton, 2002). In this study, the minimum criteria set forth were:

- Minimum one-year employment with the chosen Fire Department.
- Either male or female, although all participants were male due to the lack of females employed by the Department
- No minimum rank within Department.

Using maximum variation sampling, care was taken to select participants who vary in age, length of time on the Department, and rank in order to capture as many different views and descriptions as possible. Maximum variation sampling documents unique or diverse variations that emerge in adapting to different conditions. With maximum variation sampling, significant themes to be examined will cut across the majority of variation (Patton, 2002). Midway through the data collection, it became clear that participants considered the
first year on the Department as very important to their experience with and ability to cope with stress. Therefore, one exception was made to the minimum sampling criteria, as one participant with less than one year of experience was interviewed to provide relevant insight into the stressors unique to the beginning of one’s career as a firefighter.

3.4 Data Collection

Data was collected through in-depth, semi-structured interviews. Prior to the interview, each participant read a letter of introduction (Appendix C), and signed an Informed Consent Form (Appendix D). The face-to-face varied between 45 minutes and one and a half hours in duration (See Appendix E for interview guide). Prior to the interviews, participants completed a questionnaire that asked participants to rank their overall health, perceptions of stress as well as their ability to cope (see Appendix F). The questionnaire helped to direct questions during the interview and to use the interview time as effectively as possible. During data analysis, the information revealed from the questionnaire helped to categorize participants with similar characteristics.

Questions asked throughout the interview can be categorized as experience/behavioural questions, opinion/value questions or feeling questions. Experience/behavioural questions ask about experiences faced by the respondent, as well as their actions in specific situations (Patton, 2002). Opinion/value questions aim at understanding the thought process of the informant. The answers to these questions tell the researcher what the participant thinks, his/her intentions, desires, expectations and goals (Patton, 2002). Feeling questions examine the affective dimension of life and such questions will result in descriptive and emotion based responses (Patton, 2002). See Appendix G for a breakdown of interview questions, corresponding research questions, and type of question asked.
Throughout the interviews, participants were asked to discuss their experiences as firefighters, their roles as firefighters, as well as their perspectives and feeling about stress encountered in their occupation. The interview guide was pilot tested on two firefighters from the Fire Department to ensure proper wording and appropriate questioning. Following the interviews, the firefighters were asked to comment on the wording and nature of questions as well as additional questions that could be added to future interviews. These pilot tests reflect the cyclical nature of qualitative research and are therefore used as the first phase of data collection. The remaining ten interviews were conducted and transcribed between December 2004 and March 2005.

Throughout the duration of the study, the researcher kept a journal to capture personal thoughts, insights and observations throughout the data collection process. The journal recorded field notes that contain descriptions of what was observed outside of the interviews (Patton, 2003). These descriptions included ideas for themes and categories to be considered during data analysis, as well as all biases and thoughts of the researcher to be acknowledged during the analysis phases of the research.

Due to the emergent nature of the qualitative research design, the direction of research was open to change. The researcher began the interview process with a semi-structured interview schedule; however, additional questions were added as participants discussed themes and phenomena not previously considered by the researcher. Appendix E includes the dates of when new questions were added to the interview guide. New information and questions were pursued as they emerge within the study. By allowing the focus of the study to change as necessary, the study continued to be naturalistic in nature, as
the researcher was not manipulating or controlling the direction of the findings (Patton, 2002).

Upon the completion of open and axial coding of all transcripts, participants were sent a member check package. In the packages were a letter to the participants explaining the purpose of the member check (see Appendix H); their personal interview transcript; and a brief follow-up questionnaire (see Appendix I). Participants were also mailed a self-addressed envelope to return the questionnaire to the researcher. With the questionnaire, participants were provided the opportunity to comment on the findings from the coding and were able to ensure they were represented by the themes and categories. In total, six member checks were returned with comments confirming and adding to the findings. It is assumed that the unreturned member checks reflect the participants’ agreement with the findings.

3.5 Data Analysis

The analysis of qualitative data followed the approach used for grounded theory. Grounded theory is a style of research that involves specific methods and procedures (Patton, 2002). The grounded theory approach to qualitative research is often referred to as the “constant comparative method” because of the process of constantly comparing the data to other data and concepts (Schreiber, 2001). The comparison of data does not begin after the data has been gathered, but rather throughout the entire data gathering process (Schreiber, 2001). Hubberman and Miles (1994) provide an interactive model of the components of data analysis (see figure 9.0).
The process of analysis described in figure 9.0 occurred during the design of the study, during data collection, and after data collection. Data reduction involved reducing potential data in anticipation of forthcoming information. The researcher chose a conceptual framework, research questions, cases and instruments (Huberman & Miles, 1994). Data display involved organizing, compressing, and assembly of information so that conclusions could be drawn and action taken (Huberman & Miles, 1994). Conclusion drawing and verification involved drawing meanings from the data. This phase included comparing and contrasting information, taking note of patterns and themes, clustering, triangulation, looking for negative cases, following up on unexpected information, and verifying findings with participants (Huberman & Miles, 1994).

Following each interview, the words of the participant were transcribed verbatim. Transcripts were reviewed and analyzed by the researcher. Analyzing data gathered through a grounded theory approach involves lengthy coding processes. Strauss (1987) outlined the coding process involved in grounded theory research:
1. **Open coding** where initial categories are developed to group similar data together;

2. **Axial coding** where the categories are disassembled and reassembled in new ways revealing the central phenomenon, causal conditions, strategies, context, intervening conditions, and consequences;

3. **Selective coding** involves "coding systematically and concertedly for the core category. [...] The analyst looks for the conditions, consequences [...] that relate to the core category" (p. 33).

All three phases of coding were incorporated in this research. The open coding process began as all transcripts were reviewed and coded for initial groupings or themes. All data referring to the stressors associated with firefighting were grouped together. Three additional themes were also created for data associated with coping, health and firefighter persona. When distinctions within the themes began to emerge, the process of axial coding began to establish the central phenomenon within each grouping. For example, within the stress theme, distinctions between different types of stressors were evident. Sub-themes of stress were created that grouped similar stressors together, such as stressors associated with calls, stress associated with the City, and the struggle within the firefighter. The process of creating sub-themes during axial coding was done for all themes. When data collection was approximately half complete, the researcher began to make notes to begin the process of selective coding. These notes consisted of written memos and diagrams mapping potential relationships between themes and sub-themes. When all the interviews were complete and themes appeared to be saturated, the process of selective coding continued. In this phase of
data analysis, the researcher reassembled the themes and illuminated the relationships between themes and sub-themes, according to the testimonies of the participants.

The coding procedures forced the researcher to be skeptical and questioning of the data. Skepticism and questioning guard the researcher from taking on the opinions and beliefs of the informants as their own (Strauss & Corbin, 1994). The questionnaire completed prior to the interviews assisted in the selective coding process. It was during selective coding where categories from open and axial coding process were re-arranged to form a detailed understanding of the responses (Cresswell, 1998).

At the onset of the study, the researcher was expecting to gain testimony reflective of the perceptions of stressors among firefighters. The researcher asked about the strategies used to perceive and appraise stressors in a manner that allows firefighters to cope with the stress and trauma witnessed on the job. Due to the nature of qualitative research and its tendency to evolve as a result of participant responses, the researcher did not hypothesize about potential findings in order to remain open to the potential directions data lead the research. Therefore, the findings presented in the following chapter are reflective of this Fire Department specifically, with some general insights into firefighting as an occupation. The findings are not reflective of the general population as a whole.

3.6 Trustworthiness of Research

Unlike quantitative methodology, qualitative research does not follow equations or formulas to reach the final outcome of the inquiry. For this reason, qualitative research is often accused of being overly subjective or "sloppy" (Lincoln & Guba, 1985, p. 289). These assumptions are untrue, as numerous guidelines are suggested to increase the trustworthiness
of the findings. Patton (2002) suggests that trustworthiness of findings is based on credibility, transferability, dependability, and confirmability.

Credibility is concerned with providing believable analysis; judgments of quality research will lead to perceptions of credibility (Patton, 2002). Lincoln and Guba (1985) propose a number of techniques to increase judgments of quality, including activities in the field to increase credibility (such as prolonged engagement, persistent observation and triangulation), peer debriefing, negative case analysis, referential adequacy, and member checks.

Transferability is similar to “external validity” in quantitative research. This criterion of trustworthiness asks if findings can be transferred to other settings with similar characteristics (Patton, 2002). Identical transferability, according to Lincoln and Guba (1985), is impossible. As the authors state:

[t]he naturalist cannot specify the external validity of an inquiry; he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility (p. 316).

Dependability is the evaluation of the methodical process being systematically followed (Patton, 2002). Dependability can be paired with the concept of reliability from the quantitative vocabulary (Lincoln & Guba, 1985). Confirmability is similar to objectivity, and consists of “testing ideas, confirming the importance and meaning of possible patterns, and checking out the viability of emergent findings with new data and additional cases” (Patton, 2002, p. 239). To ensure both the dependability and confirmability of findings, the
researcher can undergo an audit trail of analysis, memos, field notes, and journals. The audit trail is an examination of the research and analysis process (Lincoln & Guba, 1985).

Each of the criteria that contribute to judgments of the trustworthiness is summarized in Table 3.0. As the table indicates, there are similar terms in the quantitative vocabulary. It is important to note that the criteria of trustworthiness guide the current research and related quantitative terms are merely reference points. It is also important to remember that, unlike quantitative methodology, trustworthiness can never be proven. As Lincoln and Guba (1985) state:

[N]aturalistic inquiry operates as an *open* system; no amount of member checking, triangulation, persistent observation, auditing or whatever can ever compel; it can at best *persuade* (p. 329).

Table 3.0

*Summary of Techniques for Establishing Trustworthiness*

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Technique</th>
<th>Related quantitative term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>1) Activities in the field that increase the probability of high credibility:</td>
<td>Internal validity</td>
</tr>
<tr>
<td></td>
<td>a) prolonged engagement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) persistent observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) triangulation (sources, methods, and investigators)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Peer debriefing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Negative case analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) Referential adequacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5) Member checks</td>
<td></td>
</tr>
<tr>
<td>Transferability</td>
<td>Thick description</td>
<td>External validity, generalizability</td>
</tr>
<tr>
<td>Dependability</td>
<td>Dependability audit, including audit trail</td>
<td>Reliability</td>
</tr>
<tr>
<td>Confirmability</td>
<td>Audit trail for analysis, memos, field notes, journal</td>
<td>Objectivity</td>
</tr>
</tbody>
</table>

Adapted from Lincoln & Guba, 1985, p. 328.
CHAPTER 4.0: FINDINGS

The purpose of this study was to develop an understanding of how firefighters perceive and cope with stressful situations and the relationship to health. The aim of this research was to answer the following research questions:

- What is perceived as a stressful experience for firefighters?
- How do firefighters perceive stressors associated with occupational stress?
- What are the coping mechanisms of firefighters?
- What is the relationship between the stress-coping process and health?

Upon reading the transcripts of the participants, four themes surfaced, which will be described using the words of the participants. Prior to introducing the themes, a description of the participants and the perceptions of their health, level of stress, and ability to cope is presented in Section 4.1. These themes respond to the main research questions guiding the study. In addition, another theme emerged which is central to understanding the relationship between stress, coping, and health among firefighters. The initial theme, Persona of the Firefighter (4.2), includes firefighters’ descriptions of themselves and how they believe others perceive them. The Stress of Firefighters (4.3) identifies the stressors described by the participants. Coping Strategies of Firefighters (4.4) is the third theme to be described, in which the participants identify and describe the strategies they use to cope with the stress encountered on the job. Finally, how the participants define their health and its relationship to the three previous themes will be explored in the theme entitled the Health of Firefighters (4.5).

Within each of the following sections the findings are presented. At the conclusion of the sections appears a discussion of the findings. In these passages, connections are drawn to
the literature pertaining to each theme. Following this, in Chapter 5.0, a model is presented and depicts the relationship between persona, stress, coping, and health.

4.1 Description of Participant Perceptions of Health, Stress, and Coping

Prior to the description of themes, it is important to provide a description of the participants and their perceptions of overall health, levels of stress, and ability to cope with work-related stress. These findings emerged from participant responses to a questionnaire prior to participation in an in-depth interview. Table 4.0 visually depicts the years of experience of the 12 participants as well as their ranking of their overall health. Table 5.0 summarizes the participants ranking of their overall work-related stress as well as the types of stress across Wheaton’s stress continuum (1999). Table 6.0 portrays participants overall perceived ability to cope and their ability to cope with the types of stress presented by Wheaton (1999).

Table 4.0

Participant Health Profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Years Experience</th>
<th>Overall Health</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;5</td>
<td>5-10</td>
</tr>
<tr>
<td>Jeff</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Sean</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Garry</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Spencer</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>James</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Devon</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Colin</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Aaron</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Kyle</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Seth</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

* Participants ranked overall health between two categories. “x” has been placed at the lower bracket.
The participants’ years of experience in the Department ranged from less than five years to over 20 years. In addition, during the twelve months prior to the interviews, most participants rated their overall health as being between moderate and very high. Jack is the only exception to this pattern. He relates his low ranking to an injury received the last year.

Table 5.0 summarizes the participants’ rankings of their level of stress. Participants ranked their overall level of stress as “moderate” (average = 2.75, range: 1-4). There are equal numbers of participants who perceive their overall level of work-related stress to fall below moderate as those who perceive their level of stress to be above the ranking. There are differences between participants with less than 10 years experience and those with more than 10 years experience. The overall ranking of those with less than 10 years experience averages 2.7, while the average ranking for those with more than 10 years experience is 2.93. Daily hassles received the highest ranking for participants with less than 10 years experience (average = 2.6, range: 2-4). Participants with over 10 years experience ranked chronic stress (average = 3.14, range = 1.5-5) and traumatic events (average = 3.14, range: 1-5) as the most stressful.

Non-events were ranked as the least stressful by participants with less than 10 years experience, as all participants ranked this form as stress as “low” (2). Participants with more than 10 years experience ranked life-change events as the least stressful (average = 2.21, range: 1-3.5).
<table>
<thead>
<tr>
<th>Participant</th>
<th>Years Experience</th>
<th>Overall Level of Stress</th>
<th>Daily Hassles</th>
<th>Non-Events</th>
<th>Chronic Stress</th>
<th>Life Change Events</th>
<th>Traumatic Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeff</td>
<td>x</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Sean</td>
<td>x</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Jack</td>
<td>x</td>
<td>3.5</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Garry</td>
<td>x</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Spencer</td>
<td>x</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Average (0-10 yrs)</strong></td>
<td></td>
<td>2.70</td>
<td>2.60</td>
<td>2.00</td>
<td>2.40</td>
<td>2.40</td>
<td>2.40</td>
</tr>
<tr>
<td>James</td>
<td>x</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Devon</td>
<td>x</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Colin</td>
<td>x</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Aaron</td>
<td>x</td>
<td>2.5</td>
<td>1.5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Jordan</td>
<td>x</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Kyle</td>
<td>x</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Seth</td>
<td>x</td>
<td>3</td>
<td>2.5</td>
<td>4</td>
<td>2.5</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Average (10+ yrs)</strong></td>
<td></td>
<td>2.93</td>
<td>2.79</td>
<td>2.43</td>
<td>3.14</td>
<td>2.21</td>
<td>3.14</td>
</tr>
</tbody>
</table>

**Overall Average**

| Overall Range | 1-4 | 1.5-4 | 1-4 | 1-5 | 1-3 | 1-5 |

Note: 1 = very low  
2 = low  
3 = moderate  
4 = high  
5 = very high  
Scores indicating .5 represents a response between to levels (example: 3.5 = between moderate and high)
Table 6.0 summarizes participants' perceptions of their ability to cope with work-related stress. Overall, the participants indicate they are able to cope well with work-related stress (average = 3.85, range: 3-5). As indicated in Table 6.0, the perceived ability to cope well with stress is generally constant across the years of experience as responses range between "moderate" and "high." The one exception, Spencer, being among those with less than five years experience. Jeff and Sean respectively rank their ability to cope as "very high" (5) and "high" (4). Overall, participants with less than 10 years experience assess their ability to cope between "moderate" and "high" (average = 3.80, range, 3-5), while those with more than 10 years experience rate their ability to cope closer to "high" (average = 3.93, range: 3-5).

Participants with less than 10 years experience indicate they are best able to cope with non-events (average = 4.20, range: 4-5) and chronic stress (average = 4.20, range: 4-5). Daily hassles received the lowest ranking (average = 3.80, range: 2-5). Participants with over 10 years of experience rank their ability to cope with life-change events as "high" (average = 4.07, range: 3-5). Chronic stress received the lowest ranking among participants with over 10 years of experience (average = 3.50, range: 2-4.5).
Table 6.0

**Participant Coping Profiles: Participant Perceptions of Ability to Cope**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Years Experience</th>
<th>Overall</th>
<th>Daily Hassles</th>
<th>Non-Events</th>
<th>Chronic Stress</th>
<th>Life Change Events</th>
<th>Traumatic Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeff</td>
<td>≤5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sean</td>
<td>x</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Jack</td>
<td>x</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Garry</td>
<td>x</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Spencer</td>
<td>x</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Average (0-10 yrs)</strong></td>
<td></td>
<td><strong>3.80</strong></td>
<td><strong>3.80</strong></td>
<td><strong>4.20</strong></td>
<td><strong>4.20</strong></td>
<td><strong>4.00</strong></td>
<td><strong>4.00</strong></td>
</tr>
<tr>
<td>James</td>
<td>x</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4.5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Devon</td>
<td>x</td>
<td>4</td>
<td>4</td>
<td>3.5</td>
<td>3.5</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>Colin</td>
<td>x</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Aaron</td>
<td>x</td>
<td>4</td>
<td>4.5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>Jordan</td>
<td>x</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Kyle</td>
<td>x</td>
<td>4.5</td>
<td>4.5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Seth</td>
<td>x</td>
<td>3</td>
<td>3</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Average (10+ yrs)</strong></td>
<td></td>
<td><strong>3.93</strong></td>
<td><strong>3.57</strong></td>
<td><strong>3.71</strong></td>
<td><strong>3.50</strong></td>
<td><strong>4.07</strong></td>
<td><strong>3.86</strong></td>
</tr>
<tr>
<td><strong>Overall Average</strong></td>
<td></td>
<td><strong>3.85</strong></td>
<td><strong>3.67</strong></td>
<td><strong>3.92</strong></td>
<td><strong>3.79</strong></td>
<td><strong>4.04</strong></td>
<td><strong>3.92</strong></td>
</tr>
<tr>
<td><strong>Overall Range</strong></td>
<td></td>
<td>3-5</td>
<td>2-5</td>
<td>2-5</td>
<td>2-5</td>
<td>3-5</td>
<td>2-5</td>
</tr>
</tbody>
</table>

Note: 1 = very low   2 = low   3 = moderate   4 = high   5 = very high
Scores indicating .5 represents a response between to levels (example: 3.5 = between moderate and high)
4.2 The Persona of a Firefighter

The persona of a firefighter encapsulates the participants’ image, perceptions, and descriptions of firefighters. This theme emerged during the analysis as all participants described their perceptions of themselves and how they believe others view them. Participants were not asked directly to describe their perceptions and views; rather these descriptions emerged in response to other questions during the interviews. Based on the responses and self-descriptions of participants, it became apparent that the ability to appropriately apply the specific label and identity of “firefighter” to themselves is very important. For some, being a firefighter has given them an opportunity to reach their potential. As Seth explains, “[T]o me, it’s a tremendous self worth. It’s what I like to do. As corny as it sounds, it’s who I am. I’m at my best firefighting.” To James, firefighting is a career that personifies the qualities he sees in himself. As he states:

I’m a helper. I’m a rescuer, as it’s been defined. This job allows me to do that, to be that. I just like the feeling of being there for somebody when they need help. This job offers me that. […] It is somebody you can look up to, somebody you can turn to for help, someone you can rely on. I am all that.

As depicted in Figure 10.0, three key factors were described by the firefighters as defining the firefighter persona: helping others (4.2.1); role definition (4.2.2); and changing representation of firefighters (4.2.3).
Figure 10.0  The persona of the firefighter
4.2.1 Helping Others

Nearly all the participants described wanting to help others, be it victims and bystanders (4.2.1.1), the community (4.2.1.2) or co-workers (4.2.1.3). In the following section, participants describe what helping others means to their persona as a firefighter.

4.2.1.1 Service to victims and bystanders

In the following quote, Seth describes the firefighter’s duty of helping others:

There was an old platoon chief a long time ago [who] said when that bell goes they’re calling you. There’s no one else who will go, they’re looking for a fireman, they need you. […] Just by being there a lot of the time we make things better. […] I tell them, if you think you need us, call. If you thought twice you needed us, you’ve waited too long. We can always go home, there’s no charge for it. I wallow in being the good guy. I like my people, my victims, or whoever it is I’m dealing with that day, I like them to feel a little better after they’ve met me or worked with me. Generally if they’re calling me, they’re probably having a pretty shitty day. I’d like to think I’ve made it a little bit better.

Colin likes the responsibility of helping others and describes why firefighting was a desirable career path for him:

Well, it is the excitement of the job too, but the main reason for me is to help people. I like to help people and there’s not better satisfaction for me than, for instance, helping someone on a medical call. Helping them to feel better. That’s a good feeling for me. I like the excitement; it’s nice to have lights and sirens going and the chaos. The bottom line for me is what I feel is our main objective is actually helping people.

Similarly, Aaron describes what it is like to have helped someone who was in need:

[T]here are certainly incidences that I’ve been to, that I’ve walked away from very pleased. The incident might have been negative in nature, but I thought that we either worked well as a team together or did a very good job, or that we affected someone’s life in a positive way, even if it was a negative experience for them.
Helping people is not limited to the victim of a certain call. Garry describes the desire to give additional attention to bystanders or witnesses to incidents: “There’s always someone standing beside that has to deal with it too. So I tend to give them a little attention too.”

### 4.2.1.2 Service to the community

Some participants named community work as an important aspect of the firefighter identity, as Devon explains. “Firefighters are very generous with their time and they try to give back to the community a lot. I think it’s important to do that too.”

Participants have their own descriptions of how they view their occupation. Garry reveals his idea of firefighting by saying firefighting involves, “A lot of community involvement, which there is, but there can always be more. And a level of professionalism.” Jack and Spencer specifically mention the importance of community work when becoming a firefighter. As Jack describes: “the roles in the community; how [firefighters] participate and how they get active. There’s quite a prestige to this job that comes with that responsibility.” He later adds “It’s just the fact that most of the time we do anything, or participate in anything or help out, it’s always for somebody else.”

For Spencer, community work is a priority that has changed since being hired on to the fire department:

I didn’t do much charity work before, and whenever there is an opportunity to do something for someone else, you do as best you can. [...] You like to do things for other people.

Spencer also describes the overall importance of community work to establishing the reputation of firefighters: “On the off days, the more charity work the better. Because
people say ‘look at what the Fire Department is doing this week.’ There’s always something.” Kyle also believes that the community work described above helps with the public’s perception of firefighters. As he states:

I think we are well respected. We have a good rapport with a lot of fundraising events, service clubs. We maintain a pretty high profile for charity and donations and having people attend stuff for public relations.

Similarly, Spencer notes that community work helps to prevent a negative image of firefighters from forming:

The more PR the better. We get our picture in the paper. And people are like, ‘Oh, those guys are doing something instead of just sitting at the fire hall.’

4.2.1.3 Service to co-workers

Wanting to help others is also reflected in the way firefighters look out for each other. Spencer describes his sense of responsibility and wanting to help his co-workers. In particular, he notes the added sense of responsibility to the newer firefighters as he spends more time with the Department:

You change roles a little bit. I had some great firefighters who were hired before me. You tend to help the younger guys who come on right after you. [...] You just help the guys to keep on track and the things you need to know. [...] There’s some older guys who just lead you on to do the right thing. [...] Guys look out for each other so they don’t get in trouble. You pass that along. [...] When you first start out, you don’t help because you don’t know for yourself. Because the hall has downsized, I’m one of the older guys downtown. [...] I’m one of the older guys, so I’m responsible for leading the guys.

Jordan echoes the increased concern for other firefighters as he moves up the ranks on the Department:

[Before it was just my job to be able to know the tools I’m working with and how to use them. Now, it’s my job to make sure that the job [...] is supervised properly. Take care of the guys and to make sure they’ve got the skills they need. [...] There’s a whole different way of
looking at it. [...] Before it was kind of easier. You just worried about yourself. Now you don’t worry about yourself as much, you have to worry about everyone and everything else.

4.2.2 Defining the Role of Firefighters

Participants described in detail their roles as firefighters. This description included job duties and roles (4.2.2.1), their changing roles (4.2.2.2), the variety and challenge associated with firefighting (4.2.2.3), and serving the Department (4.2.2.4).

4.2.2.1 Job duties and roles

The persona of the firefighter is defined in part by the definition of roles created within the occupation. Participants described specific duties expected of them while on shift. These duties may vary depending on the position or rank of the firefighter. Those with less experience are in charge of the maintenance of the equipment and hall. Sean describes what is involved for his shifts:

The first thing you do is always check your truck. Make sure your vehicle is in good working order. You’re going to have a morning meeting or an afternoon meeting depending if you’re working days or nights. You go to that, clean the hall, clean your vehicle, daily training. We also get our coffee breaks and our lunch breaks between that. And we also run calls as well.

Jack describes the more specific roles taken on in the hall:

The guys usually take on roles. [...] For our shift, for example, all the drivers go downstairs and they check their trucks. The driver is considered ultimately responsible for the vehicle [...]. Then the riders will go upstairs and will be responsible for cleaning the upstairs. It’s usually a joint effort. And depending on the interruptions, a call or if there’s a task that needs to be done. Say a truck broke down or something needed to be changed over, then everyone would, as we say, gang it. Everybody would just jump on it.

Firefighters who are in a supervisory position, such as acting captain, captain, or senior captain have different duties to perform. Kyle and Jordan have over 20 years of
experience and explain that their responsibilities include supervision of other firefighters, creating schedules, supervising the maintenance of halls, and arrange training. Jordan states:

*I'm in charge of that station. Like everyone that's there. I have to make sure that everyone else does their job, check their vehicles, and request anything that is required. I'm in charge of doing the training for the guys for the week. There's a certain amount of scheduling that goes along. I try to make sure I can accommodate their needs.*

To this description, Seth adds:

*What I don’t do anymore, is the actual physical maintenance of the equipment. While I’m doing [my job], guys are downstairs washing the trucks, checking equipment, [inspecting] the hose. I don’t do that anymore. Senior guy.*

Daily responsibilities at the hall are not the only differences between the ranks.

Responsibilities at the calls are also different. As Jordan describes:

*My job is different. I’m more in a supervisory position. So if we went to do an extrication, then it's my job to size up and determine who’s required and what’s required. Make sure the guys are there to do it. I don’t micro-manage that. If I want a door off, I’ll tell them to take the door off or take the roof off, then we’ll have a look. That’s the end of my responsibilities. I don’t try to get in or tell them how to do it. That’s their job.*

Seth describes in detail a call that was also mentioned by other participants as a memorable moment in their careers. This call involved the loss of three children when their townhouse caught fire nearly three years ago. This quote demonstrates Seth’s responsibilities on scene, but it is also a description of the overall responsibilities every firefighter has at a call:

*It was a morning that shouldn’t have happened. [...] As a professional, everyone did a terrific job. [...] I saw some outstanding firefighting there. Even on my own behalf, I had a second wave of guys lined up because I’m also concerned about loosing this building. I’ve got trucks circling the building; calling back extra people; doing about six things at once. Keep in mind, I’m not getting my hands dirty. I’m standing back trying to oversee the whole operation. [...]
I’ve got guys fighting fire inside, lots of them. [...] It was not a day to be ashamed of. [...] It’s what makes firefighting. It was one hell of a day. [...] I had men going in from everywhere. I don’t mean to diminish the loss of the kids, because it still bothers me, but not only did we get those kids out in record time, we stopped from loosing the entire building. It was fully involved when we got there and it was a town house. We kept it to the one unit without loosing it. That’s what firemen do. It was a bang-up job. The guys who went in and got those kids, actually fought through fire to get to them. [...] I don’t feel bad, like we should have done more. [...] Still, it’s a sad and horrible thing.

Firefighting is an occupation that allows individuals to achieve goals as a team.

James became a firefighter after a career change. Firefighting appealed to him because of what he had seen and heard from others:

The camaraderie, the working together as a team as opposed to individual. Just the type of work, the specialties they get involved in and where our services would be required.

Similarly, Devon discuses, to be a good firefighter, one must be a strong team player:

The team players perform around here very well. If you have that concept, if you can think in those terms, you’ll do well on this job. It really is a team effort when you have a fire. No one guy can do it on his own because he’ll die trying. As a bundle we’re a lot stronger than as a single strand. [...] It’s nice to be the guy spraying the water and knocking the fire down. But the guy supplying the water to you is just as important because without him you’re not going to be doing anything. The team aspect is huge here, huge.

4.2.2.2 Changing roles

During the interviews, some participants noted that the overall duties of firefighters have changed in recent years. Spencer’s description is representative of other responses offered by participants. As he describes, there are changes in the types of calls the Department is responding to and that this change is difficult for some firefighters to adjust to:

A lot of the older firefighters that are on the job, they didn’t have to do a lot of medical calls. That was kind of introduced about 10 years ago. Where most of our calls are medical calls now. And that’s not
what they applied for. That’s not what they are used to. They are used to fighting fires. That’s what firefighters do.

4.2.2.3 Variety and challenge

With performing their duties and helping others, many participants noted that firefighting is a job with a lot of variety and challenge, which they enjoy. As Jordan describes:

It’s not like any other kind of job in the world. You don’t know what you’re going to do in five minutes, let alone 5 hours. Every call is different. Every call’s a challenge. Every minute and every day is a challenge and it’s great.

Spencer adds, “The variety. And not knowing what you’re getting into. [...] I seem to thrive on the little adrenaline here and there.”

4.2.2.4 Serving the Department

In addition to the duties performed at the fire halls and at calls, some firefighters take on extra responsibilities within the Department. Some of the participants in this study volunteered themselves to take on additional roles in order to better themselves and the rest of the Department. As Jack describes: “Very rarely do we ever do anything for ourselves [...] but for the group gain.” These responsibilities included being a floor steward, being on a committee to acquire and maintain fitness committee, and sitting on the Health and Wellness Committee.

As Jack describes, his responsibilities as floor steward for the Department are important because it ensures the fair representation of co-workers and the upkeep of equipment needed for the job:

I was a floor steward. If someone got in trouble I’d go in with them and I’d represent them with the chief. [...] Some of the guys don’t want to do it. A lot of the guys don’t want to do it. [...] Now I’m starting to pursue avenues where I’m separating the love and the
passion for the job to the business portion of it. And unfortunately if somebody doesn’t get into the business portion of it, then we’re just going to be run ragged and we’re going to be driving old trucks.

Spencer and Kyle are both involved with the wellness aspect of the Fire Department. Spencer is responsible for the acquisition and maintenance of fitness equipment for the Department. Part of Spencer’s responsibility is to ensure “there’s something to do in every hall.” Kyle represents the health and safety concerns through his position on the Health and Wellness Committee. Kyle describes the responsibilities associated with this position:

[W]hat we try to do is be aware of conditions, work and safety conditions of the equipment, of legislation that may affect the equipment we may have. We deal with health and safety suggestions and meet with the Deputy.

There are advantages when volunteering for additional responsibilities within the Department. As Kyle describes:

It’s given me some great opportunities for advancement and I try to take advantage of that. Through health and safety committee we’ve done some nice traveling. Had some good education. There was a symposium in Hawaii, went to a symposium in San Francisco. I was able to bring my wife both times. So being able to travel and learn. It’s been great.

4.2.3 The Changing Reputation of the Firefighter

Participants articulated a number of ways in which the firefighter image has changed over time. This was found in the firefighters’ changing image of themselves (4.2.3.1), as well as within media portrayals (4.2.3.1) and changing public perceptions (4.2.3.3).

4.2.3.1 Changing image of self

Many participants articulated the perceptions children have of firefighters and describe having the same understanding. As Jack describes, “I think most boys or kids might be fascinated with a big red truck and the lights going by and a whole lot of noise.
And I just really never grew out of it.” Spencer had a similar response saying “every boy wants to be a firefighter at one time.”

However, over time and with experience, the participants now describe firefighting in terms of a personality or a way of being. Jack now portrays firefighters as not being of a specific physical description, but as having a certain type of personality. As he states:

[It is] not necessarily the ability to lift a 300 lbs person down a ladder [...] Some people try to do the super hero kind of stuff. I think it’s more of a personality.

Similarly, Seth describes firefighters as having a specific way of being:

Maybe it’s an immaturity. A mature immaturity. And I think that’s what firefighters have to possess. They are the same people who run into buildings that other people run out of. Ever run across ice when you’re a kid? [...] Firemen are generally the ones saying ‘lets see how far we can go.’ They know someone is going to fall but lets just see how far we can go. That kind of thing. I think you have to have that same little boy-ish excitement about you to keep the job exciting.

Some participants described how, over time, firefighting has changed the way they view themselves. Sean illustrates his change in attitude since being hired:

I think my attitude has changed a little bit. I had a huge head when I first got hired. I was young. [...] I had a big head; that “I’m a firefighter, I can do whatever I want, and get anybody I want” kind of thing. I think that changes. I don’t want to say I’ve humbled myself, but I’ve certainly calmed down. I’ve realized I’m just an average person.

4.2.3.2 Media portrayals

Participants highlighted the recent shift in the ways that firefighters are portrayed in the media. Seth captures the shift in media portrayal and public opinion in the following quote:

[When I started, on TV firemen were always like the comic relief. If you ever noticed, they were always the bumbling guys taking down places, the Three Stooges kind of fireman job. Now they’re the tall
This page contains a continuation of the text on the previous page. Due to the nature of the content, a specific question or context is not immediately apparent. However, the text seems to be discussing a technical or scientific topic, possibly related to data analysis or statistical methods, given the presence of terms and phrases that suggest a formal or academic setting. The content appears to be dense and detailed, typical of advanced research or study material. Without additional context, it's challenging to provide a precise summary or translation.
good-looking guys who are the calendar boys, kind of thing. People recognize them as that. Now you’ll see it where the police are being the bumbling and they make the firemen be the good guys. I think it funny for that perception, because I know we hear things at work, like ‘firemen are hot.’ Nobody ever said that when I started. [...] Was I too soon or something?!

4.2.3.3 Changing public perception

Several participants also described the dynamic nature of the public’s perception of firefighters. Seth and Spencer both acknowledge the recent attention to the occupation due to the events of September 11th in New York City. As Seth describes:

Ever since 9/11, I would say, the community has had a very positive role on my feelings. We’re lucky because we’re riding the wave of others. I didn’t really have anything to do with 9/11, but everyone recognizes me now as a fireman.

Spencer agrees that the events of September 11th have helped with the public’s concern for firefighters: “After the 9/11 thing, everybody just loved firefighters. You got waved at and that type of thing. We’re lucky because people like firefighters.” James, however, describes how he does not take the increased support for firefighters personally: “It’s not me the person they like or dislike; it’s the uniform I’m wearing. It has nothing to do with who I am; it’s about what I represent.” Jeff acknowledges that the perception the public has of firefighters is dependent on the image they portray, even when they are off duty. In the following quote, he describes the pressure to maintain a positive image for the Fire Department at all times:

There is that pressure that you wonder if you do or say something at a call if people will change their perception of firefighters. If you’re [...] out somewhere else and they know you’re a firefighter and they see you drunk or whatever or they hear you yelling or something. You wonder if they might change their perception. [...] I like people to know that I am a firefighter. If they do need help they can ask me. But then there’s that other half, where if they know I’m a firefighter and they see me do something, they have a negative thought about it.
4.2.4 Discussion of the Firefighter Persona

The participants in this study portrayed themselves in a variety of ways. Their self-image includes being helpers in the community and at work, having specific roles, and being responsible for explicit duties. According to Berzonsky (1992), self-identity creates a context in which the individual can identify the purpose and meaning of their life. More specifically, by answering the following work-related questions, an individual is creating a work-identity, which may or may not be separate from one’s overall self-identity. Questions one might ask include: 1) “What does work mean in and for my life?” and 2) “What do I want to mean to others through my work?” (Meijers, 1998, p. 200). By answering these questions, the individual is giving meaning to their work (Meijers, 1998).

According to the responses of the participants, the title of “firefighter” provides both a purpose to their life, and meaning to what they do. Purpose comes in the form of tangible outcomes such as successfully completing duties and fulfilling the role of “helper,” as described by James:

I’m a helper. I’m a rescuer, as it’s been defined. This job allows me to do that, to be that. I just like the feeling of being there for somebody when they need help. This job offers me that. [...] The uniform would represent who I am. It is somebody you can look up to, somebody you can turn to for help, someone you can rely on. I am all that.

Park and Folkman (1997) describe meaning within the stress-coping process as including: a) a re-evaluation of a stressful event as positive; b) the ability to answer the questions “why?” an event occurred; c) identifying ways in which one’s life has been changed because of the event; and d) stating the ways in which one has “made sense” of the event (p. 115). The meaning derived from these actions is seen in the identification of changing life perceptions participants described, such as the description provided by Sean:
Just because I can drive around most places and say I’ve had a call at that house and it looks beautiful from the outside, but it’s a hole on the inside. [...] I think it has changed the way I look at things across the board. [...] I think it’s more just perceptions of how life goes about.

Participants described their perceptions of firefighter characteristics. Jack stated that firefighters have a specific personality when he stated: “I think it’s more of a personality.” Korotkov and Hannah (2004) examined the role of the Big Five personality model when individuals ranked their health. The Big Five model is comprised of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The authors found that the personality factors, with the exception of neuroticism, positively affect one’s perception of health.

The self-identity of the participants can be linked to discussions of self-esteem. Turner and Roszell (1994) describe self-esteem as comprising interpretations of how an individual imagines being viewed by others (reflected appraisal), comparing oneself to others (social comparison), and judging oneself based on successes and failures (self-attribution). All three elements of self-esteem were reflected in the words of the participants. Participants believe firefighters are well liked by the public. Spencer stated: “After the 9/11 thing, everybody just loved firefighters. [...] We’re lucky because people like firefighters.”

Social comparison and the perception of successes and failures are more closely related to the stressors described by participants. This will be discussed in more detail in Sections 4.3.4 “Lack of Understanding from Non-work family” and 4.3.6 “The Struggle within the Firefighter.”

Reflected appraisals also come from abstract trust, which is created, in part, through messages from the mass media. Newton (1997) defines abstract trust as the “foundation of
imaginary, empathetic, or reflexive communities” (p. 580), which eases the uncertainty and complexity of society (Arai & Pedlar, 2003). During his interview, Seth described a shift in the public’s perceptions of firefighters from comic relief to “the tall good-looking guys who are the calendar boys [...] People recognize them as that.” The changing perception of firefighters emerges, to some extent, from messages and portrayals of firefighters in television shows, such as Third Watch and Rescue Me, and movies such as Backdraft and Ladder 49. In these representations, firefighters risk their lives for others with little emotional or physical consequence. The Hollywood description of firefighters as strong, both physically and emotionally, sets a standard toward which “real life” firefighters appear to strive. This is confirmed by Jack during the member check when he explains, “I feel my role as a firefighter is my security blanket. I feel that what I am, or the position I have, makes me stronger.” Moran (1998) suggests that the hardier self-perception and the belief one is better able to cope with stressful situations is representative of an older “tough guy” (p. 38) stereotype of firefighters and emergency service workers. This perception of firefighters may not be representative of the current reality, as participants in the current study provide examples of situations in which coping with situations proves difficult, as described in Section 4.4.

An aspect of the firefighter persona comes from the image portrayed to the public. Helping in the community was identified as being important to public relations with the City. As Spencer describes:

The more PR the better. We get our picture in the paper. And people are like, ‘Oh, those guys are doing something instead of just sitting at the fire hall.’
Some of the community activities identified by participants include garbage clean-ups, filling dunk-tanks, fundraisers, and public appearances. The title of “volunteering” to the community work done by participants is not applied in this case because, as Yarnal and Dowler (2003/2004) describe, volunteers “engage in continuous, substantial helping out of free choice and in the absence of moral coercion [...]. The assumption is made that these individuals volunteer for philanthropic reasons over personal motivation” (p.4-5). It can be argued, based on the responses of the participants, that the community work by firefighters is based on personal motivation to maintain a positive image, rather than philanthropic or intrinsic rewards (Yarnal & Dowler, 2003/2004).

4.3 The Stress of Firefighters

Throughout the interviews, participants identified a number of tensions in their job that lead to stress. As Figure 11.0 demonstrates, the stressors of the firefighters involved in this study can be categorized into job-related stressors, such as requirements of the job (4.3.1) and stress associated with calls (4.3.2). Participants also described stressors within the social network, including tension between firefighters (4.3.3) and the struggle between families (4.3.4). Stressors associated with institutions were identified during the interviews and include a description of stressors emerging from decisions controlled by the City (4.3.5). Finally, participants described stressors found within the individual firefighter and include an explanation of the struggle within the firefighter (4.3.6). It is important to note, however, that each participant differs in what they consider to be stressful. As Jack describes, “Different things affect different people.”
4.3 STRESS OF FIREFIGHTERS

4.3.1 Requirements of the job
  4.3.1.1 Duties & tasks
  4.3.1.2 Supervisory stressors
  4.3.1.3 Concern for safety
  4.3.1.4 Strain of shift-work
  4.3.1.5 Desire to be busier

4.3.2 Stress associated with calls
  4.3.2.1 Calls involving children
  4.3.2.2 Unknown elements of calls
  4.3.2.3 Medical calls

4.3.3 Tensions between firefighters
  4.3.3.1 Personality, teasing & confrontation
  4.3.3.2 Intergenerational conflict

4.3.4 Struggle between families
  4.3.4.1 Lack of understanding from non-work family
  4.3.4.2 Concern by the non-work family for firefighter's well-being

4.3.5 Stressors related to control by the City
  4.3.5.1 Perceived lack of concern for FD
  4.3.5.2 Contract negotiations
  4.3.5.3 Condition of equipment

4.3.6 The struggle within the firefighter
  4.3.6.1 Feelings of helplessness
  4.3.6.2 Being critical of self
  4.3.6.3 Maintaining focus

Figure 11.0 The stress of firefighters
4.3.1 Requirements of the Job

Some of the stress associated with firefighting emerges from the nature of the job. Participants described stress associated with the unpleasant duties and tasks required of them (4.3.1.1), supervisory stressors (4.3.1.2), firefighters’ concern for their safety (4.3.1.3), the strain associated with shift work (4.3.1.4), and the desire of the participants to be busier while they are on-duty (4.3.1.5).

4.3.1.1 Duties and tasks

Participants described elements of required duties that caused them irritation or stress.

Colin describes specific duties that are irritating:

Just stupid things. Taking a truck out of service and you don’t feel like switching everything over. Doing a hose change, no one likes to do that, but it’s part of the job. [...] You know you have to do, it’s just psyching yourself up to do it. You bitch about it, but you do it.

Despite some unpleasant tasks, Spencer emphasizes the importance of knowing how to do everything that is required of the job:

If you get caught not knowing something, it makes the captain look bad, and it just goes up the ladder. [...] Doing it in the hall is different than doing it on the scene because you have the pressure of getting it done right now. And there is a captain screaming at you to get it done. [...] There’s so many factors that come into play outside the fire hall.

4.3.1.2 Supervisory stressors

The stresses experienced by firefighters in supervisory ranks differ from other firefighter’s stressors. Devon is currently in the position of Acting Captain. For him, this position comes with a specific form of stress related to a lack of knowing where he will be stationed from day to day. As he describes:

Part of a daily hassle for me as an acting captain would be just coping with not knowing which station I’m going to be at. [...] Sometimes at
20 after 6 in the morning or 6:30 someone's called in sick at a station or whatever. Pack your stuff up; you're going there. It's a bit of a circus act trying to get through this acting rank.

Aaron is also in the position of Acting Captain and describes similar feelings:

I’m really starting to tire of the constant movement. I’d like to be able to go somewhere for a four day rotation and stay there. It’s nice to be able to network and work with all the guys on the platoon, but it gets difficult because you can’t settle into a role somewhere.

Jordan and Kyle are in supervisory positions and they describe the added stress associated with their ranks. Jordan describes the stress he experiences as a result of his concern for the well-being of the firefighters under his supervision. As he states:

[M]y biggest stress is the guys. I have to make sure they’re okay. If they have a call which is a little bit out of the ordinary, then I have to make sure it doesn’t bother me because it’s my job to take care of them. It’s a whole different way of looking at things. It’s almost like a parent with kids. It doesn’t matter what you’re feeling or what you’re doing, it’s them that you worry about.”

Kyle describes the added demands associated with a supervisory position:

[I]n the Senior Captain’s position where the phone never rings and anything that comes is usually bad news and needs to be dealt with right away or in the near future. Stress of the guys, trying to please them, but you can’t please everybody. It’s a busy time and a lot of responsibility.

4.3.1.3 Concern for safety

The risks associated with firefighting create stress for many of the participants. Jack describes the obligation to enter unknown situations and the stress this causes for him:

[Y]ou’re forced to put your own opinions and your own safety behind. That’s what you sign on for. You can’t say no to unsafe work. Can’t be like ‘according to the bill, we don’t have to go in.’ No, according to the bill we DO have to go, whether you want to or not. It’s your job. With that is some big responsibility.
An aspect Colin feels is stressful is the risk associated with medical calls. As he explains, he is concerned about contracting an illness from the patients:

I know personally, one of my biggest fears is contracting some deadly disease like AIDS, Hepatitis C or HIV. There's a lot of 911 calls we go to are crack houses. Someone might poke you with a sharp, the needles we call sharps. [...] I'm always scared to catch a disease and bring it back to my family.

4.3.1.4 Strain of shift work

For many participants, shift work is strenuous. As Garry describes, shift work affects his ability to focus:

For me, it's the shift work and the routine that we follow. [...] But we work a block of time. So right off the block are days of the week. [...] The loss of that, then throw in the nights. And the nights are just lost. And everything gets shuffled and jumbled. And that makes it difficult. For me, I've noticed that for me. And that's probably because I'm getting older than a lot of these guys. [...] It doesn't help the coping.

Seth agrees that the shift work is stressful, however for him, the stress is more physical than mental:

When you're running all night, you're tired. And there's a stress to that. I'll be at one call and I'll hear another call coming in. [...] There's a stress to that, but that's not an unhappy stress, that's not something I go home and wish wasn't there. That's just part of the tension that makes the job.

Spencer expands by explaining the strain placed on the firefighter when working night shifts. As he states:

It's stressful when you have to jump out of bed. [...] Four nights in a row kind of wears on you. [...] You just wanna get away from the job, that type of thing. It's ok at 3:00 in the afternoon. Just another call, it gets you out of the hall, that type of thing. But you rack out and another call, and another call, and another. 5:00 in the morning and you've had your 5th call [...]. That wears on you.
4.3.1.5 Desire to be busier

Many of the participants expressed a desire to be busier with calls while they are on-duty to help pass the time. Garry describes the City and his desire to have more calls: “I would be surprised if everyone didn’t say they wish they were a little busier. It’s a slow, [...] GM town.” For some, the slower days are more stressful than those that have many calls. Jeff describes his annoyance with slow shifts:

[T]here’s some days I come into work pretty excited and thinking I want to have a nice busy day. Get outside, especially when it’s nice and sunny out you want to be out doing stuff. But then it turns out there’s no training going on, it’s a slow day in the City and you don’t really do anything, just mulling around the hall. [...] I find I tend to get really restless. [...] I want to get out there and do my job.

Like Jeff, Sean also finds slow shifts disappointing:

All firefighters love fires, so I’d rather be busy than sitting around the hall doing nothing. I find your anticipation level when you become a firefighter [is high], then there’s nothing.

During his interview, Jordan acknowledged that there are times in the job that are slow, however for him those times, are balanced with the emotionally strenuous situations:

Just like I tell the guys, especially when they start, 98% of the time you are way over paid for what you do, but the other 2% of the time, they couldn’t pay you enough to do it. It shouldn’t be allowed that anyone is put in that situation. It just isn’t right, almost. But that’s our job.

Sean also described how the daily calls offer a break to the life in the hall: “When you go to the call it’s a break. Most guys like to get out of the hall. They don’t like to be cleaning the vehicles. They’d rather be out on the streets doing calls.” As participants have described, there are down times when calls are not coming in. Garry describes what it is like for firefighters to go from quiet times to a sudden rush at a stressful call, which in this example, is a call with a child:
We’re sitting there, joking and laughing and whatever, then two minutes later we’re in someone’s living room and dad’s dead in the chair, there’s chaos in the room. […] Again you’re going from here [hand just above table] trying to do a prank, which is hilarious stuff that goes on, and then the next minute you’re up here [moving hand to level of face]

4.3.2 Stress Associated with Calls

All participants recounted calls that stood out in their minds as being memorable.

Colin provides a description of what it is like to attend a stressful call and how these situations stay with him:

I compare it to a flashback to war veterans in the Vietnam. Certain things stick in your mind and you can’t get them out of your head. You just learn to cope with them, but you never forget them. Those images are burned.

Through these stories were themes associated with the types of calls or elements of calls that create stressful situations, including calls with children (4.3.2.1), unknown elements of calls (4.3.2.2), and medical calls (4.3.2.3). Participants cautioned, however, that high stress is rarely the result of a single traumatic call. As Kyle describes:

A single incident may do it, but I think it’s more likely to be a result of an accumulation. One or two bad calls, but then three or four start adding up in a short period of time. We’ve had some fatalities recently, and the same guys have been to them. That starts to add up. We’ve had some hangings. It can add up.

4.3.2.1 Calls involving children

Working with children was discussed by many and described as stressful. Devon describes why, for him, calls involving the deaths of children are stressful:

[When its children dying in fires or young guys, […] those things stick out in your mind because they’re young and they have so much life ahead of them. It makes you think about those events more.
For Sean, his most traumatic call involved the death of a child. As he describes, this call has stayed with him over the years:

The one that comes up the most, and it’s the first child death that I had. I didn’t expect to see it; I walked right by the child. I didn’t realize it was a child, I thought it was a doll. It’s always bothered me whenever I have a kid call. It sort of comes back.

Colin also describes how calls associated with children strike him personally. As he states: “Children, loosing kids. That is very, very upsetting to me.” Devon not only described why calls involving children are stressful, he also discussed what it is like for him to see his friends and co-workers affected by these calls:

But just the effect it had on my co-workers, I think affected me as much as anything. There were some guys that were just destroyed by that. They were really messed up.

Spencer explains it is not only children who make calls stressful. For him, people towards whom he feels sympathetic and people who live in circumstances he perceives as unfortunate create a feeling of stress:

People you just feel sorry for. They’re in an unlucky position and they can’t help themselves. We see drug addicts and stuff like that. You feel that they chose that, but you don’t know their backgrounds. Stuff like that [...] bothers me.

4.3.2.2 Unknown elements of calls

For some participants, going into unknown situations is stressful. As Kyle describes:

“I think a lot of it is the unknown. Going to calls where you’re not sure what to expect.” Garry agrees with Kyle when he describes the unknown aspect of domestic calls:

The only time we’re iffy is with domestics or you don’t know who’s around the corner. We’ve been to home invasions that have been horrendous. You’re still given a set of circumstances that you deal with. You’re just apprehensive about the unknown.
4.3.2.3 Medical calls

Other calls that are stressful for some are medical calls, as they have changed the scope of the job. "Medicals" were commonly identified as being stressful by those who have been on the Department for a longer period of time. As Jordan explains, "when I started, it was never part of the job. A lot of the new guys, it has always been a part of their job."

Kyle expands by describing his feelings about medical calls:

Our calls have probably doubled in the last 10 years since we started doing CPR. Then we got the defibrillations in and now we're doing read outs and stuff. [...] So that's what causes the stress, I guess, are those. That I'm not as comfortable with that as I would be with the fire calls. [...] They can be messy. They can be unpleasant. Really a horror show for some.

Jordan also describes the environment in which firefighters must work when at a medical call:

You get certain calls where the guy's got shit coming out of his mouth, his nose and his ears and its all over the place. Then you have to work in that environment.

Not all participants had calls that stood out as being stressful. For example, James describes his ability to emotionally separate himself from calls,

I've seen other guys fall apart at the seams. [...] I have yet to come across anything that has made me take a step back and think. [...] I've pretty much seen it all. [...] It's just, do what you have to do.

Jeff is new to the Department and has yet to encounter a highly stressful or traumatic call. Although he is aware that he will encounter traumatic calls throughout his career, he describes the anticipation he feels knowing it is only a matter of time until his first traumatic call occurs:

I expect it to happen sometime in my career. As for dealing with it, I don't know how I'm going to act. I figure, hopefully it won't be too bad because that's the job I'm in. [...] I wouldn't say it weighs on me,
I’d say it’s just a wonder in my head. I know it’s going to come eventually. I just wonder how I’m actually going to react to it.

4.3.3 Tensions between Firefighters

Although participants are quick to describe life at the fire hall as being tight knit, there are times for each of them when conflict between co-workers causes tension at work. As Jack describes:

As much as I say there’s the camaraderie and the personality of it, it’s not all fairy tale. There’s guys having conflicts with other guys and I say, you know what, it’s worse than a freaking hen house. Some of these guys start nattering, and [...] I say that you guys are worse than a bunch of women. Talking about guys behind each other’s backs. But as soon as that bell rings, it’s all forgotten.

Aaron makes a similar comparison to co-workers when he says: “I liken it to living in a building with 8 different wives.” The strain is most-often due to personality clashes. However, some participants have also described tension between “generations”; that is, between the more experienced firefighters and those who are new to the occupation. These aspects of the conflict are explained in the descriptions below.

4.3.3.1 Personalities, teasing, and confrontations

As Sean describes, the conflict between co-workers is due to the strong personalities required of the job: “There’s so many different attitudes and they’re all strong attitudes, there’s nobody who is just a follower, they’re all leaders.” According to Colin, much of the conflict is due to slow days when there are not a lot of calls “Sometimes the down time can be a little hectic because guys start to tease each other. It’s not like anything vicious. But sometimes the down time gets a little monotonous.” Sean agrees, and adds

And because we do spend a lot of time at the hall together, cleaning, it gets to the point where you do get sick of each other once in a while. As much as you love working with the guys, you do get sick of each other.
There are some participants, however who have experienced conflicts that are more long lasting than the daily teasing described by Colin and Sean. Aaron describes his personal experience with conflict:

There’s certainly been some confrontations that I don’t think will ever heal over time. I can let the bygones be bygones, but they won’t. [...] That can be difficult to work around.

Spencer also offers his insights into what it would be like for him to work with disapproving co-workers:

There’s some smaller halls that only have 3 people in it. If you don’t get a long with that person, that could be stressful. Like 10 hours a day with that same person. [...] I think that would be more stress for me if I had somebody giving me a hard time. I think that would be harder on me than some of the stuff you see outside the hall.

4.3.3.2 Inter-generational conflict

During the interviews, some participants described personality clashes between generations of firefighters. James describes why he believes the division exists between newer firefighters and those with many years experience:

Older versus younger is just that generally the older guys aren’t into fitness, they’re not into the working out, they’re not into the current state of affairs. They are kind of old school in regards to the way the department is done and operated versus the new changes that naturally happen over time. They are kind of stuck in their ways. Work wise, sometimes, because they see it the way they did it 30 years ago whereas someone new has seen it from 2 years ago.

Other participants, however, offer more specific examples of the tension between the generations of firefighters. For example, Kyle is in a supervisory position and sees newer firefighters questioning the policies in the Department:

A lot of the guys getting hired now think we should be glad that they’re there. And just let them carry on the way they want. They don’t realize that things are fairly structured, have to be structured.
They take it very personally sometimes if things don’t go the way they think they should.

Sean, a fairly new recruit, describes his frustration with what he feels are unnecessary duties at the hall.

[Dealing with the bullshit around the hall. Dealing with what the Chief wants done around the hall. Just the day-to-day maintenance. Having to deal with that I find are my daily stresses. Dealing with stupid stuff they want us to do, that I don’t feel are really necessary.

Aaron is in a unique position in that he supervises people who are older than him.

This causes some tension on the job, as he describes:

Well, there certainly have been times where there have been confrontations with people that considered you a junior to them because of your seniority or amount of time on the job. And the fact that they don’t respect the position you’re in because they’ve been there longer and they feel there’s nothing you can offer them that they don’t already know.

For participants responsible for scheduling of other firefighters on their crew or platoon, they experience another form of stress in attempting to make everyone happy. As Kyle explains, “Another part of the stress with my job, and everybody feels it differently I think, but trying to please everybody.” Jordan agrees and adds, “Some guys always, they always feel like they are being hard done by. [...] Those to me are the hassles that I constantly have to be put up with.”

To Seth, the stress is not the scheduling of co-workers, but rather having no control over deciding whom he will supervise, and therefore adapting to the personalities assigned to his crew. He has learned to cope with this, as he explains:

I think personalities and working with and relying on people that I didn’t choose to work with. They were sent to me, so now I’m dealing with all kinds of personalities. That doesn’t make one good or one bad. It’s just that they’re different, and you have to learn to deal with it.
Similarly, Jack explains some of the conflict he experiences is due to the different leadership styles and personalities of captains by whom he is supervised:

There’s conflict between captains. Some captains try to run you, they want to show you that they’ve got the stripes and now ‘I’m going to run it the way I want to run it because I’m the boss.’ Then there’s captain, that ‘ok fellas, you did this for me and my back, and no matter what happens I’m there for you guys.’ Kind of work both ways. It all boils down to the leadership aspect of it. [...] We’re grown men, we know what we have to do. Just you sit up in your office and you do what you gotta do, and leave us to it. And if we don’t do something, then get on our ass.

Not all participants felt challenged by the other generation of firefighters. Colin has been on the department for over 10 years and respects the abilities of new recruits: “There are different qualifications; they’re smarter, they’re more qualified. There seems to be more specialization now.”

4.3.4 The Struggle Between Families

Participants spend nearly half of their time at work in the fire hall. For some participants the lifestyle of a firefighter (see Persona, 4.2) is very important and their co-workers become like a second family. The lifestyle of firefighting often causes tension between the firefighter and their family at home, which for this research is being referred to as “non-work family”. This tension can come in the form of a lack of understanding from the non-work family (4.3.4.1), concerns by the non-work family about the firefighter’s well-being (4.3.4.2), and marital strain (4.3.4.3).

4.3.4.1 Lack of understanding from the non-work family

Participants described many situations that are unique to firefighting. Due to the uniqueness of these events, the non-work family often does not understand the strain placed on the firefighter. As Jack describes:
I think the big stress to an individual would be the impact of being a member of this family at the fire hall may have on a family. It’s something that a wife or children really couldn’t understand. […] So I think what ends up happening is that the major stress on a firefighter’s person would be outside of the job, being that their family doesn’t understand what goes on.

Jordan also describes a confrontation he had with a brother who hassled him for many years about a perceived lack of work required in firefighting. Jordan is able to illuminate the strain that is created when one does not have a family that understands the situations encountered by a firefighter:

I remember one day in particular, I said, this is enough. So I explained a couple of the calls we’ve been on. Well, I know he’s in no position to handle what we handle. He was turning green; it was great! And just because he was turning green doesn’t mean I was going to stop. Like enough is enough. I had to put up with like 10 years of this crap. […] I just as soon not be with my family. If I’m not working, fine. But I’m not going to make a day change just to do some stupid thing with them just so you can get into an argument with these guys.

4.3.4.2 Non-work family’s concern for firefighter well-being

Sean described a tension between the non-work family and his job, although for him the tension in the family is a result of their concern for his well-being:

I don’t think it’s the dangers; it’s more of the kind of stuff we deal with. Like I don’t think my parents like that I see a lot of death. […] I’ve seen a lot of stuff that other people don’t see until they are older. I saw a lot of it when I was really young too. They are proud that I do the job but I think just the fact that I deal with a lot of stuff that other people don’t sort of bothers them.

4.3.4.3 Marital strain

Many participants also described marital strain related to their occupation as firefighters. Aaron described the strain on his marriage due to the stress at work and believes that his marital problems stem from a “lack of understanding of what I experience at
work.” Spencer describes watching friends at the fire hall go through similar marital problems and the effect it has on life at the fire hall:

There’s a high divorce rate in firefighters and cops and all that. It’s tough, you see a guy that you’re very close with, and he’s going through a divorce and he’s telling you there’s kids involved and all that stuff. You feel for that person. You see it affect the job. As I said, part of the job is just in the fire hall and you get off the phone with your ex and you’re trying to get things organized that way and he gets mad at another person for no reason.

Garry summarizes his experiences by saying, “There’s a high divorce rate in the fire department, as there is in coppers. You can put that down to just the stress level again. It’s a crazy shift work thing.”

Kyle had a different perspective on the home-work relationship. For him, firefighting has been a very good career for raising children and spending time with his family:

It’s been great for raising a family. [...] With the shift work, I’ve been able to do a lot with the kids. Helping out at the school and getting some class trips in. [...] It’s been great that way. It’s a good job for a family.

4.3.5 Stressors Controlled by the City

The stressors associated with the Corporation of the City can be identified as concerns that are ultimately controlled by the City. Participants describe feeling a lack of concern for the Fire Department on behalf of the City (4.3.5.1), stress related to contract negotiations (4.3.5.2), and concern for the condition of the equipment (4.3.5.3).

4.3.5.1 Perceived lack of concern for the Fire Department

At the time interviews were conducted, the Department was without a Fire Chief. The City’s perceived lack of urgency to find a replacement Chief was viewed by participants as indicative of the City’s lack of concern for the well-being of the Fire Department. As Garry describes, the lack of a Fire Chief has a rippling effect throughout the Department:
Lots of things get side tracked, decisions don’t get made, simple things become difficult. [...] Everything from lacking a #1 guy to make decisions all the way down, to commitment.

Kyle elaborates on the Garry’s concerns by saying:

I think there’s a feeling that the Department is a bit of an afterthought. Like we’ve been without a chief for 7 months now and they haven’t taken a real issue with hiring a Chief or replacing him. We’ve got 2 Deputies and neither one of them got accepted for the job. So now guys are thinking, if these guys aren’t good enough to do the job, how can they run the Department now? I think it’s just a lack of responsibility from the Corporation to maintain the Department properly. Budget items will take precedent over a lot of things we consider for safety or for necessity.

Jack also passionately describes the lack of concern he perceives from the City:

I think what happens is that a lot of time, even through the City, they’re all like ‘Yeah, we’re glad you’re here, we love you guys, you guys are the best.’ But when we turn around, it’s like ‘fuck you, we got you in the back.’ [...] Guys get pissed off. They really do.

These perceptions of the City’s attitude toward the Department have led to decreased morale on behalf of the firefighters. As Kyle describes:

I notice it in the sarcasm and their look at things. If the City doesn’t care about that, why should I care about this? [...] It shows in people’s work habits and the result. Some things people do or should do; they put a half-ass effort because they think it’s reflected by the Corporation and how they treat us.

4.3.5.2 Contract negotiations

Participants indicated they are currently in a year to re-negotiate their contracts with the City. During the interviews, some participants anticipated a struggle with the City to settle on a contract. As Kyle states:

[W]e won’t be seeing a negotiated raise within the year. It may end up at arbitration. And that’s another thing that hurts morale. We go
to the City looking for a raise. ‘You guys are worth every penny. But we can only pay you so much.’

Spencer expresses what he would like to see in the new contract “for the amount of risk we put in, I think better pay.” Colin also describes his frustration with the tension around contract negotiations:

Here I am running into a burning building, putting my life on the line and you son of B’s, when we go to settle a contract; put us through the grinder. They don’t want to give us the money; they think we’re over-paid. How dare they? You don’t feel appreciated; you don’t feel that you’re worthy. Your self-worth takes a beating a little bit. […] We promise to be on-duty 24 hours a day, 365 days a year. I feel they take advantage of that.

4.3.5.3 Condition of equipment

Another major concern expressed by participants is the condition of equipment being used by the Department. As James describes:

[I]f it was their equipment that they had at home, it wouldn’t be in that sort of disrepair. They’d either have it fixed or have a new one. Where here, its okay, but it’s a piece of equipment that will save your life or someone else’s life. And if it doesn’t work, then we feel like crap. Our equipment is falling apart and who do they look at? The guy using it, not the guy who’s supposed to buy it, or fix it, or maintain it. […] That frustrates us.

Participants note that members of the public are often unaware of these concerns due to the public relations strategies used by the City. As Kyle describes:

[I]f there’s a parade they put the new trucks in that look good. There’s a line saying that we should put in the trucks we really have to use, with the rust showing and the body falling apart. But that’s not the image we want the public to see.

The stress related to the condition of the equipment is not the same for all the firefighters. Jeff is not yet allowed to drive the trucks, and for him the conditions of the vehicles are not a major stressor:
I don’t have to deal with driving the old vehicles. I wouldn’t say there’s a lot of stress there, but there’s always the days where we have to change the equipment over to another truck because this one broke down again.

Although the City is behind in replacing the equipment, there is currently a catch-up policy in place to upgrade trucks. With new equipment comes new technology, which, according to Colin, can also create stress for some firefighters on the Department:

You get new equipment, updated trucks. Better trucks, better equipment, better teaching techniques, better training. They just come with the job, though. It’s not a traumatic thing; it’s for the better. Technological change. Just sometimes for an older guy to come on line with the new stuff because he’s used to the old way of doing things and he’s going to get grandfathered into the new way.

Overall, the majority of the participants expressed some kind of concern for the overall well-being of the Department. Jack summarizes this concern by saying:

People’s lives and safety will be put in jeopardy just because the City doesn’t give a shit. It’s an obligation we have to make sure that we bring to the attention of hopefully, our immediate supervisor right up to the mayor. You know what, you’ve got a problem here. I don’t expect you to know about the problem. But now I’m addressing it to you. This needs to be fixed because this is a big issue. Somebody could get hurt or killed.

4.3.6 The Struggle Within the Firefighter

During the interviews it was apparent that many of the participants experience significant inner-struggle. The inner-struggle for the participants includes feelings of helplessness (4.3.6.1), being critical of themselves (4.3.6.2) as well as the struggle to stay focused (4.3.6.3).
4.3.6.1 Feelings of helplessness

The majority of the participants described the desire to help others (See Persona, 4.2.1). However, when the participants are in a position when they cannot help someone they also find themselves feeling anxious. As Garry describes:

You get tired of seeing things. Not tired of seeing things, but tired of not being able to do anything about it. It’s great to say you come in after and you couldn’t change it. But there’s still helplessness that goes with that.

Seth also describes the feeling of helplessness and how it comes to fruition for him:

Well, it is stressful and you go through periods of that helpless feeling. [...] If someone needs help and you’re giving it to them, I don’t find that terribly stressful. [...] [T]here’s that feeling that you’re doing something right. But it’s that feeling when, say someone’s having a heart attack or has had a heart attack. [...] Like, I’m doing my stuff how come it’s not working. That’s stressful.

Similar to feeling helpless is Aaron’s description of being overwhelmed at a call and second guessing decisions he was making:

I was overwhelmed at that time. [...] At the time, I wasn’t sure. It wasn’t something I had dealt with before. I knew some of the decisions I had made may come back and bite me a bit. [...] I was second guessing whether I was making the right decision or not. [...] What would I do now? How do I deal with everything that is going on here? How do I keep control of this? [...] It was hard. It felt like you were wearing 3 or 4 different hats.

4.3.6.2 Being critical of self

Some participants are very critical of themselves and the mistakes they believe they have made on the job. Seth explains the pressure he puts on himself to do a good job:

I find the biggest stress upon myself is not doing a good job. [...] Something won’t get done or something will get forgotten or we’ll do something wrong and it’s like ‘I should have known. I should do better than that.’ That’s my personal stress. And I’m not a perfectionist, but there’s a right way and wrong way. There’s a good way to get things done. Generally that’s what I strive for.
Colin and James explain similar critical feelings that have been with them since they were children and have found their way into their work life as well. For Colin, being critical of himself and his abilities is a way of receiving approval from others:

I put a lot of pressure on myself and I’m very critical on myself. I’ve been like that ever since I was a kid. [...] I’m my hardest critic and I beat myself up with everything. A lot of it, too, is approval from your peers.

James describes being self-critical, although he does not perceive it as being stressful because it is part of his nature:

I’m very hard on myself. [...] I’ll be the first guy to beat myself up. What I didn’t do as well as I should have. If you’re going to criticize me, you’re going to have to get in line because it starts right here. [...] That’s part of my nature. I’ve always been that way. If it’s stressful, it’s just always there. I wouldn’t know the difference. I’ve always, always had it. It’s just the way I am.

4.3.6.3 Maintaining focus

The challenge of staying focused on the job is another battle for firefighters. Staying focused includes, as Colin describes, fighting complacency:

Complacency is our biggest enemy. The firefighter has the biggest battle against complacency. It’s easy to get complacent if you’ve gone to the same apartment building three times in that night. It’s easy to say it’s just another false alarm. But that 4th time, there might actually be a fire. If you approach it complacent, then you’re really going to be in trouble.

Another concern for maintaining focus is fighting the tiredness that comes with shift work, especially during the night shifts. Devon describes the effect lack of sleep has on him and his performance at work:

I think that’s one of the biggest symptoms [of stress] for me would be sleep. [...] When I’m trying to rest, I’m thinking a lot. [...] It makes you a little nervous. It shortens your fuse a little bit when you’re tired. I think it’s the same with everyone. When you’re fatigued you
don’t perform as well or your patience isn’t quite what it could be if you’re fatigued.

4.3.7 Discussion of the Stress of Firefighters

The responses from the current study illuminate the multi-faceted nature of firefighting and suggest that the stress associated with this occupation goes beyond the calls to which firefighters respond. Many previous studies have reported the stress and emotions associated with traumatic calls attended by firefighters. The loss of a child (Guidotti & Clough, 1992); exposure to trauma and death (Beaton et al, 1998; Corneil et al, 1999; Murphy et al, 1999) and participation in strenuous drills (Smith et al., 2001) are among the notable stressors associated with firefighting. The firefighters participating in this study, however, identified the calls and related events as only one stressor endured as part of their occupation. Other stressors identified by participants include the requirements of the job, tensions between firefighters, the struggle between families, stressors controlled by the city, and the struggle within the firefighter.

The stressors reported in this research highlight the ecological nature of the stress encountered by firefighters. Ungar (2002) defines ecological theory as the “transactional process, not the individual components of either the person or environment in a system” (p. 482). The stresses identified by participants incorporate the work environment, the non-work environment, the community or City, and the individual. As the participants describe, the stressors are not independent of each other. Therefore, a stressor found in one aspect of their life has an effect on others.

Considerable discussion among participants was associated with the lack of concern firefighters perceived from the City. The Effort-Reward Imbalance (ERI) model described by Siegrist et al. (2003), suggests stress may result if the employee perceives an imbalance
between the effort invested into a task and the reciprocated rewards from the organization or employer. Rewards to employees can include money, esteem, and career opportunities (Kompier, 2003). Participants in the current study described a lack of rewards for their work. Rewards firefighters desired from the City include a contracted raise, feelings of appreciation from the City and opportunities for personal growth.

In the presence of an imbalance between effort and rewards, the ERI model indicates the outcome will include employees’ feelings of unfair treatment and being unappreciated, as well as disappointment on behalf of employees (Siegrist et al., 2003). During the interviews, participants often described a feeling of being unappreciated, unworthy, or an afterthought in the way they are treated by the City, despite putting their personal safety at risk for their job. Jack described an incident in which he was injured while on duty, yet was not given any compensation or recovery time by the City:

I was like ‘what are you talking about? Here I am, a legitimate case, and I [injured myself] in a fire. And now you’re telling me I can’t take the next 2 days off of work in a cast. You want me back now? [...] I’m on painkillers or anti-inflammatories. Give me a couple days.' I got rejected. I had to take my own sick time to take it off.

In a study of emergency medical technicians (EMT’s), Revicki and Gershon (1996) found those who report supportive supervisor behaviours helped to reduce work-related stress. Reckicki and Gershon’s findings emphasize the importance of supportive rewards to firefighters who risk their safety and lives to protect others. Participants were clear that they feel unappreciated by the City, however the firefighters regularly described their attempts to support each other within the Department. Participants in supervisory positions described their attempts to support and satisfy requests made by the firefighters they supervise. The
following description by Jordan was representative of the comments made by others in supervisory positions:

If they’ve got a test coming up, I’ll go out of my way to make sure they know their stuff. I want them to do well. It’s a reflection on me and my station and my guys.

Spencer also described the benefits he gained having been assisted by more experienced firefighters and his desire to do the same for those newer to the occupation. As he stated:

I had some great firefighters who were hired before me. You tend to help the younger guys who come on right after you. [...] You just help the guys to keep on track and learn the things you need to know. [...] There’s some older guys who just lead you on to do the right thing.

In addition to feeling unappreciated by the employer, the participants often described self-critical sentiments when faced with a situation they feel they did not complete to the best of their ability. As previously discussed in the context of Persona, Turner and Roszell (1994) describe self-esteem as being comprised of reflected appraisal, social comparison, and self-attribution. Self-attribution, or the evaluation of one’s successes and failures, was common among participants, in particular the evaluations of failures. The following quote by James is representative of similar sentiments expressed by other participants:

I’ll be the first guy to beat myself up. What I didn’t do as well as I should have. If you’re going to criticize me, you’re going to have to get in line because it starts right here.

The appraisal of one’s ability to successfully complete a task is related to the concept of self-efficacy. Jimmieson (2000) defines self-efficacy in the work-environment as “judgments employees make concerning their ability to do what is required to successfully perform their jobs” (p. 264). Regehr et al. (2003) found that positive appraisals of self-efficacy are related to lower levels of stress among firefighters. The findings of the current
research, however, suggest that firefighters are often critical of their failures and less rewarding of their successes, as demonstrated by Colin, James, and Seth. Colin described his desire to do a good job as a way to gain the approval of his co-workers. James explained his life-long tendency to be self-critical. Seth described his strive for successful completion of tasks and the resulting stress if this goal is not achieved. These examples of self-critical thoughts illuminate the potential of firefighters’ increased susceptibility of work-related stress.

Revicki and Gershon (1996) explain that stress for individuals working in emergency situations may be exasperated in part by “unexpected circumstances, serious medical conditions, severe trauma, and life and death situations” (p. 391). These situational aspects were also represented in the current study. Participants described uneasiness when faced with unknown elements of calls, as well as medical situations and traumatic calls. In addition to these stressors, participants described increased stress when children are the victims or patients requiring attention. Attending to children at calls was also reported by Guidotti and Clough (1992), who identified the loss of a child as the most stressful experience a firefighter can endure.

Some participants also described the stress that arises when receiving the call. Garry and Spencer described in detail the effects of going from a slow and relaxed pace at the fire hall, to an elevated state of arousal within seconds of a call coming in over the radio. Spencer described the physical strain placed on the body, while Garry explained the mental “cobwebs” associated with the rapid change of pace. Smith et al. (2001) conducted a study of the mental effects of firefighters while participating in physically strenuous drills. The authors concluded that training drills have to potential to cause impaired cognitive
functioning among firefighters. Participants of the current study also reported temporary delayed cognitive functioning when receiving a call and changing their pace from slow and relaxed to quick and urgent. However, the participants also described the delayed functioning as fleeting; when they are on the scene of the call they are able to focus and complete their tasks.

Research by Moran and Colless (1995) found four types of positive emotions reported by firefighters who attend stressful calls: exhilaration, sense of achievement, enhanced appreciation for co-workers and life, and a sense of control. Participants of the current study also described similar positive feelings after attending traumatic calls. Many described the adrenaline rush of being called to fires. Spencer described the exhilaration when he stated:

[N]ot knowing what you’re getting into. Kind of like an adrenaline rush every once in a while, [...] I seem to thrive on the little adrenaline here and there.

In Section 4.2.1 (Helping others) participants described their desire to help others. This finding is consistent with the conclusions of Moran and Colless (1995) who stated the two most frequently reported positive emotions were a sense of achievement and feeling good about helping others. Participants of the present study also described a sense of achievement when helping the victims or patients, as described in the following quote by Colin:

I like to help people and there’s not better satisfaction for me than, for instance, helping someone on a medical call. Helping them to feel better. That’s a good feeling for me.

Participants in the study also described a personal perspective that has emerged due to exposure of stressful and traumatic calls. This is described in more detail in Section 4.4.4.
However, Jack shared his personal appreciation for life and job, as it relates to the findings of Moran and Colless (1995):

> My own personal view on life or my situation, is that I really am blessed to be able to be in this position. [...] Yes, bad things happen and yeah there are stresses. I mean, in everyone’s life. They are just things that are like, “no big deal.” Don’t sweat the small stuff kind of thing.

The final positive emotion described by Moran and Colless (1995) was a sense of control. Many of the participants described their feelings of control at calls. This is described well by Seth when he explained his actions at a call he considered to be both stressful and positive:

> I saw some outstanding firefighting there. Even on my own behalf, I had a second wave of guys lined up, because I’m also concerned about loosing this building. I’ve got trucks circling the building, calling back extra people; doing about 6 things at once. Keep in mind I’m not getting my hands dirty. I’m standing back trying to oversee this whole operation.

### 4.4 Coping Strategies

Participants identified a number of coping strategies that help to ease the stress of their job. Figure 12.0 depicts the variety of strategies used to cope with the stress associated with firefighting. Participants note that personal characteristics play a significant role in their coping, regardless of the specific coping strategy employed. As they describe, personal characteristics and ways of being (4.4.1) help them to cope with stress at work. The first specific coping pattern is to directly approach and work through stressors (4.4.2). These strategies include taking advantages of the services provided by the fire department and talking with others about stress. The second coping pattern is to avoid and depersonalize stress (4.4.3), where participants acknowledge suppressing stress in a number of ways. The
final pattern of coping is based on experience and taking comfort in the perspectives gained through experience (4.4.4). Participants describe a calming and de-stressing effect that perspective brings to stressful situations.
Figure 12.0  Coping strategies of firefighter
4.4.1 Personal Characteristics and Ways of Being

Participants attempted to explain the characteristics they possess to help them cope with the stressful situations encountered at work. Some of the participants were able to provide descriptions of coping that were more general in nature. Other participants were able to name specific traits that help them to cope, including experience, flexibility in coping styles, self-confidence and self-esteem.

Devon describes coping in a general sense and how his personal characteristics help him to cope:

I think it’s a combination of your character and your experience. There are guys who never cope well and there are guys who cope well immediately. And there are guys who will cope better with experience. I’m probably a combination of experience and not worrying too much about it.

James acknowledges that he can only generally explain his ability to cope based on his experience:

No one’s taught me how to cope or deal. I just taught myself. I talk about what works for me. But I couldn’t even tell you what that is. I’ve seen stuff that is traumatic, I can’t tell you how I physically told myself how to deal with it. I just do.

As Seth describes, his ability to cope with stress stems from his ability to be flexible during anxious moments:

If I go in there as a flag in the wind, I can see which way it’s going. I think that’s how I cope with most of it. I don’t want to waste that kind of energy or anxiety about things that haven’t happened or won’t happen.

Jordan is very specific and explains the importance of self-confidence and self-esteem in coping. As he describes:

I think self-confidence and self-esteem has a lot to do with how a person handles stress in whatever situation comes up. I feel fairly
The natural text representation of this document is not possible due to the lack of visible content in the image.
confident in myself and my abilities. Like a lot more confident than most people. [...] A lot of it, I think, is up to yourself. If you’re confident in yourself and you’re confident in that you’ve done the best you can do and all you can do, then you let it go.

4.4.2 Approaching and Working Through Stress

Throughout the interviews, participants described directly addressing the stressor in order to overcome the event and move on. Approach coping strategies described by the participants include utilizing the services provided by the Department (4.4.2.1), creating an awareness of stress and its symptoms (4.4.2.2), seeking social support from co-workers, both on- and off-duty (4.4.2.3), talking with non-firefighters (4.4.2.4), and working out and being physically active (4.4.2.5).

4.4.2.1 Services provided by the Department

Formal coping strategies identified by participants include the use of services provided by the department to help firefighters directly cope with their job-related stress. Services offered by the Department include Critical Incident Stress Debriefing (CISD), job training, and the provision of a counselor and a chaplain.

Participants frequently discussed CISD as a coping strategy to which they have been exposed. Jack describes the CISD as:

[A]most like a counsel session. It’s with our own guys, so it really helps out a lot. It’s an open forum where anything and everything can be said... Everything just gets diffused. Hopefully.

Devon explains why it is important to have peer-lead coping strategies such as CISD:

It’s really important that the person that’s involved in conducting the diffusing or debriefing be one of your peers. Because if it’s someone who’s not been there or been through what you’ve been through, it won’t have the same impact. That’s something that’s great having that peer support because you know the guys have been through something similar to what you’ve been through. That peer support is
really big. Often times, you don’t even have to leave the fire hall to feel better.

Aaron possesses a more critical opinion of the CISD process. Although he admires their willingness to volunteer, there are some firefighters on the CISD team with whom he would not want to discuss his stress. Similarly, Garry states: “[it’s] not for everyone either. I can only tell you my opinion, I don’t need an outsider coming in, or even one of our guys. Sometimes it can be the wrong guy.”

Many of the participants identified the training they undergo as being crucial for coping with on the job stress. As Devon describes, training in a controlled setting creates a confidence in his abilities to do the task in real situations:

When you do your annual recertification for CPR and those repetitious things that you do. You’re kind of like ‘this is a real pain in the neck, we do this every year.’ But then when the house is on fire and they are bringing these kids out to me [...] you’re starting CPR on this 4 year old kid. That’s probably the training and the repetition of doing these things over and over again. It helps a lot.

With the training, Sean feels tasks become “second nature, almost.” Kyle adds: “There’s a comfort in the confidence you do have. You get trained in it and trained in it and trained in it.”

Devon explains that what makes a firefighter good at his job is his ability to know what needs to be done without being told by a supervisor. As he describes, knowing what is expected comes from experience and training:

Eventually firefighters that become really good at their job, don’t need to be told what to do. [...] [T]he platoon chief shouldn’t have to tell you when the fire is burning, telling the rider of the pump to put a breathing apparatus on. You just know. You know you’re pulling lines off the truck and those things happen automatically after a while. That’s where your experience is invaluable.
Additional services provided by the Department to help firefighters cope include a counselor and the spiritual leadership of a chaplain. Participants who identified these services also indicated that they are not often used, as firefighters like to help their own through difficult times. Referring to a specific incident when a counselor was needed for another firefighter, Jordan comments: "We called the psychologist, but 'we'll see you tomorrow at 9:00.' You know, like take a number."

4.4.2.2 Awareness of stress

Some participants state that they are more aware of stress and its symptoms; therefore they feel they can cope better. As Kyle states:

I think to be aware of stress, it helps you understand what you’re going through and to not over react. I think there’s not really something wrong because it’s a natural reaction.

According to Kyle and Jack, the increased awareness of stress is due to the Corporation of the City taking the time to educate their firefighters. As Jack states:

I think [my stress has] been reduced, but at the same time I’m aware of a lot more that can cause stress and to the credit of the Fire Department, the Corporation. You know they’ve really tried to make us aware of what goes on and things to be cautious of or be aware of. If you start seeing yourself, this stuff happening, there’s help for you.

Kyle echoes Jack’s feeling regarding the effort put forth by the City to make their employees aware of stress:

[T]hat’s something that even the employer has become aware of and taking seriously. I think our perception of stress has changed, but also the way we deal with it has greatly improved as well. It’s pretty good now.

Devon is involved with the CISD team, and reveals that the training associated with the responsibility has helped him to be more aware of his personal stresses and how to cope with them as best as possible:
It just helped me to recognize stresses in my own life. It gave me some more tools to cope with it, I think. [...] Just making sure you have proper diet and exercise and avoiding alcohol and all those things you should do when you’re stressed out.

4.4.2.3 Social support from co-workers (on- and off-duty)

All participants discussed the role co-workers play in dealing with stress. Jack describes the dependence firefighters have on each other and how it helps them through rough times:

It’s kind of brotherhood of it. Guys help you do your roof and you’ll never be alone kind of thing [...] I think the biggest thing is the camaraderie, the fact that the individual firefighter has a tendency of creating such a strong bond, almost like a marriage, to these groups of guys. [...] I enjoy hanging out with the guys from work. [...] If I can just say bluntly, when you become a firefighter, it’s not a job, it’s a lifestyle.

The dependence on co-workers in encouraged within the Department. As Garry describes, shifts are very social:

It’s communal living, a nice big kitchen, there’s a TV constantly on, there’s a nice gym. On down time its taken up by kicking back, sitting down and yakking about what’s going on, watching something or occasionally we’ll all get together, watch a movie, make some food. [...] Usually we have a bit of a routine. The third night in, that’s meal night. So we’ll put a big spread up.

Jack agrees that the fire hall is a social place, which promotes coping during stressful times:

The camaraderie is fantastic. There’s tons of memorable moments from what we call jobbing people, like setting up practical jokes, or from times being able to pull together in stressful situations. Whether it be in a fire or in an accident or medical call.

When Jordan was asked where the majority of support comes from during stressful times, he answered: “it’s almost all at work. We take care of each other.” Colin describes
a time when he received support from a co-worker and acknowledges the social support among firefighters:

Actually, what really helped me was one of our own firefighters came and talked to me in the back dorm. I was beating myself up again. He made me feel really good. What really helped me accept what he said was because he’s a fellow firefighter. And I thought to myself, if anyone knows what I’m going through, he does. So coming from him had more merit than from an outsider that does it for a living, like a counselor.

Sean also comments on the role other firefighters have in relieving stress while on-duty:

Just being someone there to bounce things off the top. It could be months later that we talk about a call, I think it’s the fact that you know they’re feeling the same way or think the same way or they joked about it the same way. It makes you realize there’s nothing wrong with you for thinking the same thing. Its just being able to talk to them and realize they somewhat feel the same.

The trust between firefighters appears to develop early in one’s career. Jeff, who is quite new to the Department, describes how he already feels he can rely on his co-workers if ever it is needed:

Even in our own little groups and talking to each other. We talk about past calls we’ve been on; whether it be something funny happened or whether something more serious has happened. Hearing about them and thinking I’ll have to deal with it someday. At least I know I can bring it up with them because they’ve been through it and I can talk to them about it.

Talking with others about the day-to-day duties at the fire hall also relieves some of the daily hassles associated with the job. As Kyle mentions:

I think communication is a big thing. To talk with the other officers as I’m relieving them or they’re relieving me because not a lot of it can be solved within a one-shift period. So it’s important to let the other guys know what has to be done or what stage a repair is at.

Talking with co-workers while off duty is also an important outlet for the participants. Jack described the role off-duty socializing has on coping with stress:
There's quite the little diffusion process that goes on over a beer. You talk about calls, you talk about what may have been done better, what could have been done different. Or, there's some guys on the Department that every time they get a couple beers in them, they're in tears. You know, 11:00 comes around, they just remember this call back from 1993 when they searched a room and skipped over a bed, and they didn't find the child. Then they doubt themselves. You know, what if I had found that child 2 minutes earlier. Could they have survived?

Talking over some drinks is not limited to the participants in this study. Garry talked about going to New York City after the September 11 attacks in 2001 and described the coping process for the affected firefighters: "We went to the bars at night and these guys would talk, talk, talk to us."

Based on the descriptions above by the participants, turning to co-workers for support is common in the fire hall. James, however, describes the support by co-workers differently, stating that the firefighters he works with often do not show a need for support while at work:

[A] lot of guys don't really let it out in front of each other. I don't know if it's the old boy's club mentality or don't want to show a weakness if it does bother you. So, they'll throw a game-face on until you're home. [...] But you'll put up a strong front at work for the guys. [...] I just know from the guys I talk to, it would appear as though the majority of us in this job can let it go. [...] It may bother some guys down the road, but they don't generally tip their mitt to that.

From the descriptions above, it also appears that firefighters are eager to help co-workers in their time of need. Aaron, however, describes how he is reluctant to support co-workers because most often there is nothing he can do to help them:

There's always someone who's not having a good day. [...] I try not to let those types of stresses get to me. They don't involve me. It's like getting involved in someone else's personal stresses, unless it really affecting their performance at work, I try not to let it get the better of me. I tend to walk away from those stresses. Not that I don't care about what happens with people I work with, but 90% of the time
you won’t have any effect on it anyway. So I tend to find another place to be.

4.4.2.4 Talking with non-firefighters

Many of the participants talked about the role non-firefighters play in coping with work-related stress. All participants discussed their home families at home (non-work family) and their role in supporting them to cope with stress. Some participants revealed that going home to a loving home gives them comfort during stressful times. As Jordan describes: “I’ve always got someone to talk to at home.”

Similarly Jack notes that:

The at home family helps just because you are going home to a loving house. You’re going home to someone who’s got an unconditional love for you. [...] Knowing that, that has got a strong sense of relief. They’ll be there when I need it.

Although participants are relieved to go home to a caring home, discretion is used when they share details with their family. Spencer describes how he is cautious to not worry his family:

I don’t like to share a lot of things that happen at work. [...] It’s good to share, but not everything. [...] You don’t want to bring their worriedness into it because then you have 2 people worrying. I don’t think that helps.

While Jordan relies on his wife and family for relief during stressful times, he is careful in what he shares with them: “I’m definitely not going to tell her names and all the details of a particular call because I don’t know if she’d be able to handle that.”

Kyle also is careful to not discuss work at home. When asked if his family has a role in coping with stress, he replied:

Not really. I just get busy with other things. I try not to bring too much home because [...] I have 2 sons and it wasn’t the kind of thing you talked about in front of them. And still now, some of the calls I
wouldn’t bring up. If they ask how was work, they’ll found out. But they don’t know too much about anything that goes on.

Seth also talked about not worrying his children with what he sees at work: “I leave it behind. I don’t go home and lecture my kids about what I’ve seen today. I don’t make my problems their problems.”

Although Devon does not disclose details of specific calls to his family, he reveals that in general, his wife and children are essential for coping with work-related stress:

Hugs from kids are awesome. [...] That’s another stress reliever. I’d say as good as going for a run. [...] There have been nights when I felt really raunchy here. [...] Occasionally I’ve called my wife twice or something and said ‘I needed to talk to you again.’ That helps. Family does help for sure.

Unlike many of the participants, Jeff finds it helpful to discuss many of his calls with his partner at home: “being able to talk to my fiancé about it. She likes me to talk about stuff that happened at work. [...] It just helps to tell her I guess.” Colin also reveals that his wife and children were extremely helpful during a particularly stressful period: “My family. The counseling I went through helped, but not like my family, my wife.” For other participants, their family does not play a major role in the coping process. Garry explains that his family serves as “a distraction [...] I usually keep them separate.”

For some participants, choosing to not to talk with family is due to a lack of understanding about the stresses associated with firefighting. Jack describes what it is like when others do not relate to the stresses he faces on the job:

As much as you try to rely on the wife, or the girlfriend, or the husband to try and bounce stuff off, again you are relying on somebody who’s very partial to you. They’re in your heart, but they just don’t get it, for the most part. [...] The fact that the family can’t relate, you have a tendency to migrate, [...] with the boys. You go out and you enjoy being with these people because you are on a different level and they understand what you say.”
In addition to family, firefighters note the importance of having a balanced social circle of friends who are not firefighters. Sean describes the effort he has made to maintain his friendships outside the fire Department:

I hang out with my friends that I had before and my family I had before. When I do hang out with friends, I do talk about my job, but I try not to make that the focus of conversation.

Sean later describes the role his friends outside of work played after a stressful day at work:

The best thing for helping me was actually going on vacation the next day. I went away and I talked with my friends I went away with and just getting it out in the open probably helped the most, just talking to somebody. Even not talking to the guys I was working with, but just talking to somebody about it.

Seth also stated that he has maintained his friendships outside of work: “I’ve had the same friends since high school. We still hang around together. I’ve made new friends. My core has always been the same.”

Spencer talked about merging work and non-work friends into one group that all gets along.

I mix and match. I have a lot of things at my house where it’s both the Fire Department and my regular friends. A lot of my regular friends are good friends with people on the Fire Department now because of the connection.

Although many talked about maintaining friendships outside of work, they also note how difficult it is to stay in touch due to the shift work. As Kyle says: “When I got hired on the job I had a certain group of friends. [...] After starting the shifts and on the Fire Department, I didn’t see them very much at all.” Although Sean has maintained some
friendships outside of work, he notes that this group of friends has changed due to his work schedule:

Because of my work schedule [...] you do get a lot of time off all at once, where all my friends work Monday to Friday, 9-5 jobs, or they’re going to school so they’re still Monday to Friday. I think because I’m working weekends, I’m working holidays; I don’t get to see those friends as much. So I think my friends have changed.

Devon agrees that his work schedule has made it difficult to maintain a social network outside of firefighting, and because of that, “my support group outside of the job is definitely my family. My wife and kids for sure.”

When the participants were asked about the role the community plays in relieving stress, the responses were mixed. Some believed that there was very little in the community to relieve the stress of firefighters. For instance, Garry’s response to the question was: “I have to say zippo. [...] Looking for other institutions or other things like that, no.”

Jordan agreed that the community has very little impact on their ability to cope with stress and that is mostly because the community is both unaware of the importance of firefighters and they are also often unappreciative of the work they do:

By and large they community doesn’t know what we do. They don’t want to know what we do. [...] I know we’ve gone to quite a few calls where you feel you went way beyond what we are required to do. And you don’t even get a thanks. And that’s most of the time. And that kind of bothers me that that isn’t there. But that’s just the way it is.

Unlike Jordan, Sean feels that firefighters are recognized for their work. However, for him, recognition from the community does not affect his ability to cope:

I don’t think [the community] plays a very big role at all. If you meet new people they say ‘we’re proud,’ kind of thing. But that doesn’t play a role. To me it’s my friends and my family that are number one. The other people don’t really have an effect on who I talk to or how I deal with my stress. I don’t think dealing with the community affects my stress at all.
However for some, part of the job of the firefighters involves interacting with children from the community. Spencer describes how these interactions help to relieve the stress from the job:

_We have kids come in and they look at the trucks and that type of thing. [...] You see them smile, and they put your hat on and they love that. I guess they do play a little role in relieving stress._

### 4.4.2.5 Working out and being physically active

Some of the participants discuss the role physical activity has in reducing their stress.

As Devon explains:

_I find exercise is a fantastic stress reliever. Going for a run or riding the bike, doing some weights. They help to relieve stress tremendously. [...] I think exercise is my number one stress reliever._

Sean talks about the importance running has to him in order to cope with work-related stress:

_There are things I don’t talk about, actually a lot of things I don’t talk about. I think it’s fine because of the way I deal with it. I think working out and that, it really gets my stress level down._

Colin describes the difference that including fitness into his daily schedule had on his outlook on life and his ability to cope with stress:

_There was a period of maybe a few years where I had a lull. I didn’t work out at all. [...] I wasn’t feeling good about myself. I started to put on a little bit of weight and I didn’t like myself. [...] Now that I’ve got that back in order [...] and I feel really good about myself. I can feel that it’s made me handle stress; handle things better. I’m more confident again, like I used to be._

Spencer is uncertain whether his physical activity is directly linked to his ability to cope with stress. As he states:

_Other people say they work out or run, I always do that anyways. So I don’t do that to relieve stress. I’m sure it helps, but that’s been a_
part of my life for so long, I’m not sure if it helps or not. But a lot of
guys say that working out, or running, or walking the dog helps. I’m
not sure about that.

4.4.3 Avoidance and Depersonalization of Stress

Not all participants cope with stress directly and all of the time. Participants describe
the use of a variety of techniques to help relieve the tension, including tactics to
depersonalize the effects of stress. The avoidance and depersonalization of stress includes
humour, life away from the hall, socializing with co-workers outside of work, consuming
alcohol, and making a conscious decision to withdraw in the presence the stress.

4.4.3.1 Humour at the fire hall

Humour was described by the majority of participants as being a large contributor to
the social atmosphere at the fire hall, as practical jokes and teasing are common at the fire
stations. Jack explains that being the target for jokes is a sign of being accepted by others:

If they don’t make fun of you, then you’re not accepted. It’s a good
thing, for the most part. Nothing is done out of being vicious or
facetious. Its all in good fun; good natured fun.

Black humour was also described as being a way to deal with some of the more
traumatic and stressful calls attended by participants. The following description of black
humour as a form of coping is representative of the comments made by participants:

We don’t see things quite normally. Like if you were to listen to us
talk sometimes, especially at calls or more like the after calls. I think
you’d be quite surprised at what we said or how we handled things.
It’s like people who deal with dead people, it’s a normal thing. Like
for instance, ‘If I’m ever like that, just kill me.’ Or just words like
that. (Jordan)

Garry also describes the importance of black humour in the fire hall:

There’s a lot of black humor that goes on. So those down times are
pretty jovial. [...] There’s a lot of humor in the fire hall and everyone
is kind of messing around all the time, and that helps.
To Garry’s description, James adds “It’s not done out of disrespect. It may be, subconsciously, a way of just letting it go.”

4.4.3.2 Life away from work

Participants talk about making time to be away from the hall and work in general to reduce stress. Spencer comments on the importance of having specific interests outside of work:

I ref basketball. Not for the money, [...] just to keep active outside of the Fire Department. You can’t do just fire department things. You have to have the Fire Department and other interests.

Jeff also describes how he uses his time away from work as a way to relax and unwind: “I also try to keep active. A lot of it I try to do stuff to keep my mind off it, even if it’s just watching TV or playing hockey.”

Devon explains his separation from the fire hall, although it took time to develop the division between home and work:

I tend to keep my work and my personal life fairly separate. Around the hall I have a great time with the guys. But I’m not really social. I was earlier in my career and started to get into a lot of trouble. I think that’s just a phase.

Sean, although newer to the Department, also comments on learning to take time away from the fire hall:

I’ve learned to divide the two. At the beginning I didn’t know when to draw the line of when the personal life can affect [work]. I think if something does happen at home it can have an effect on you. [...] I try and have a separate life outside the fire hall. So I don’t see the fire hall as much as I can. [...] I carry a pager on me and I do think about stuff. But I try to make sure I have some time where I don’t worry about it or think about it.
Sean was not the only person to mention the re-call pager as a tie to the Fire Department during off-time. The pagers are a way for off-duty firefighters to be called into work if they are needed. Jordan discusses his time away from work, with the pager as the only connection to the fire hall:

I have a re-call pager, and always had one. If they need me, they’ll call me. If they call me I’ll do whatever I can do. But I’m not going to go there to be a pain in the ass. It’s not my job, it’s not my place. In that way there’s separations. I don’t have a monitor at home. I don’t want to hear what everyone else is going through. It doesn’t matter. There’s nothing I can do about it.

Spencer also does not monitor calls at home, although his reason is due to for the stress on the family when they hear what is happening at work:

Some people have pagers at home where you can hear the calls. I don’t think that’s a good idea. They hear the tones go off then their heart rate gets up and they wonder what it is. [...] If they do hear some thing on the radio like ‘firefighter down’ or something like that, which rarely happens, that would be crazy. They’d drive to the scene. I don’t think it’s a good idea having pagers at home.

Kyle also mentions the re-call pager, although unlike Jordan and Spencer, he has a monitor at home and finds monitoring calls helpful:

I don’t normally drop by the hall to see what’s going on. We do have re-call pagers, so I can monitor calls. A lot of the time I will have that on to hear what’s going on. Like calls and so on. It helps.

Having a pager allows firefighters to keep in touch with events happening at work; however, it also brings work home with them, making it difficult to fully separate home and work.

Although participants use the time away from work to cope with work-related stress, they also discussed how their home life creates its own form of stress that crosses over to work. Seth comments on his home-work relationship:
My outside life effecting personal work, I find that happens a lot. I relate things to at home. From home to work, more than work to home. I find it quite easy when I go home to close the barn door. I’ve got no problem with that. I find I bring home to work with me.

Colin also has a difficult time keeping home completely separate from work: “we’re not machines. I think it’s hard to separate totally my life and job. Go back to family, go back to job. It’s an impossibility.” Similarly, James is also very busy outside of work, and for him, it is the non-work time that creates stress, which can be brought into work:

Outside of work my plate is to the roof. I just keep loading it on. That’s where I stress myself out outside the job. I just take on and do so much. [...] Sometimes I just feel tired, bitchy. Just crabby if there’s a lot of stuff going on; either I haven’t gotten a job done before coming in to work and then its like, work is in my way.

4.4.3.3 Socializing with other firefighters while off-duty

Many participants describe socializing with co-workers outside of work. The importance of this social network differs between newer firefighters and those with more experience. As Kyle notes:

The younger guys have more in common. I remember before we had kids, we used to go out a lot more with guys. But now we have other responsibilities. The younger guys don’t have the same responsibilities, so they carry on and do more stuff on their own.

Spencer also recognizes the difference between the newer firefighters and those who have families:

There’s some that are really family oriented. They spend all their time with their family. That’s fine. There’s some young guys and they like to have fun. We just hired some guys a few months ago, and they’re in the group now. It’s not a ‘you can’t hang out with us.’ It’s more ‘here’s another guy. The more the merrier.’ It’s who ever wants to have fun. There’s a lot of people who hunt together, we’re going on a golf trip this month. [...] If you want to make it fun, it’s fun. And if you don’t want to be a part of it, you don’t have to be. We don’t look down upon people who want to spend time with their family.
(1) The measurement of the volume of a rectangular parallelepiped is made by filling it with water and using a graduated cylinder. The water is poured from the cylinder into a beaker until the level of water in the beaker is the same as the level of water in the cylinder. Then the volume of water in the beaker is the volume of the rectangular parallelepiped.

(2) The measurement of the volume of a cylinder is made by pouring water into a graduated cylinder until the level of water reaches the desired height. Then the volume of water in the cylinder is the volume of the cylinder.

(3) The measurement of the volume of a sphere is made by filling a graduated cylinder with water and then placing the sphere into the cylinder. The increase in the volume of water in the cylinder is the volume of the sphere.
Spending a lot of time with co-workers has its repercussions that affect the firefighter’s family and home life. Jordan describes the consequences he has witnessed as a result of co-workers spending a lot of time together outside of work:

They go home, then there’s a golf thing on, so they go. If there’s a pub night on, they go pubbing with the guys. So the fire hall becomes their home life as well as their work life. When you start getting into that, something suffers. You can’t have everything. Before you know it, like most of the wives don’t see them. They’re broke. [...] I do a lot of talking with the guys too, especially when they’re having marital problems, shall we say. [...] And they think everything is going to be rosy afterwards and you try to give them a bit of a heads up. ‘Get your head on buddy.’

Jordan notes the hesitation he has around socializing with co-workers off-duty, in particular with those to whom he has a more senior position while at work:

When we’re there [at the bar] we’re basically equals, but you’re not. It’s easy for a lot people to say what happens off the job, stays off the job. [...] Because I’m not a captain when we go out, that brings them up, now they’re trying to get even. [...] There’s still that distinction, even though I’m not a captain there. I’m still the captain. [...] So, like socializing, we’re not the same.

Kyle also has chosen not to socialize with co-workers during off times. He describes that an awkward situation may be created at the fire hall as a result:

A lot of times you have to enforce the rules, make them aware of what they should be doing, if they’re not. A lot of times people expect to be treated differently.

Despite hesitations among participants with senior positions to socialize with lesser-experienced firefighters in the Department, they still seek refuge and advice from their co-workers. Seth describes the friendships he has developed during his time on the Department:

People are like water, we all kind of seek our own level. There are firemen who are my friends and I hang around with when we’re not working. We don’t talk fire hall. We don’t have a rule to not talk about the fire hall, we’re just naturally friends. There’s other guys who I work with, where if it wasn’t for work, I’d never see them. It’s
not a matter of liking or disliking somebody, it's just who you're comfortable around with. So you do have that kind of support network. There are guys where we all wrote exams together and got promoted together. That's my support group, my basis. If I have a problem at work or just want to shoot the breeze with another guy, probably similar to me, I'll call and just talk with them. They'll understand because they're dealing with the same people.

A significant aspect of the socializing with others involves consuming alcohol. As Jack explains,

**Personally, I like to be able to hang out with the guys after work. Go for a couple beers.** Unfortunately, as most people, one might lead to another and the whole situation unfold, then we get a little crazy. And that's when we get in trouble.

Devon explains that the lifestyle associated with firefighting largely includes drinking with co-workers: **"It's a big part of the social atmosphere here, the parties. Huge. [...] Some guys never get out of it."** Jordan describes in more detail the relationship between firefighters and drinking alcohol: **"If they do come home, they're drunk. Our guys just drop them off in the front yard, ring the doorbell and run. To me, that just isn't a way of living."**

Being social with co-workers is fairly common, however as Garry describes, it is not as common as many people perceive it to be:

**[W]e don't do a big thing all the time, but sometimes. But if there's something going down, you may stop by for a beer or two after work. There is once or twice a year with parties and so forth, but not as much as you like.**

Many of the participants acknowledge that heavy drinking is common among firefighters, although it does not apply to them personally. For example, Garry explains his relationship with alcohol: **"I'll go out for a beer with the guys when we have our nights
on occasion. But I don’t even have any in the house. I’m not a big boozer. But it’s out there.” Seth also describes his personal relationship with alcohol:

> [W]hen I go home and close the barn door it’s usually not that big of a deal. I have all the bad habits, but I don’t take anything to excess. I don’t die to go home and have a drink or anything like that. It’s just not an issue. [...] I’m not a Mormon when I go home. I just go home and do other things.

Going for drinks often serves a specific purpose to the firefighters. Jordan explains how going for drinks is a way of celebrating the accomplishments of co-workers:

> when the guys get promoted through their classes and all that and they do all their testing and all that and they pass, then we go out. Because we’ve all been instrumental in getting to that point. So they all buy us a round. I always go, you’re supposed to. I feel obligated to go.

4.4.3.4 Physical and emotional withdrawal and forgetting

Withdrawal and forgetting events are ways that participants describe coping with stress, both on- and off-duty. Withdrawal may be emotional as Spencer describes:

> Just holding everything in. You don’t want to share. You’re in your own thoughts. There’s a lot of space in the fire hall where you can be by yourself. [...] I don’t let other people feel my grief.

Jordan has previously discussed his coping strategies, however he also acknowledges that there are times where he does not want to deal with the stress of his job: “Sometimes you just need to be alone, I just want to putter or sometimes I just want to go to bed because I’m tired.”

Sean also chooses to not discuss some issues that arise at work: “for the most part, I just stick it in the back of my mind and try to forget about it.” Likewise, Devon acknowledges that many of the calls he considers stressful have been forgotten: “I guess
I'm good at being forgetful. [...] I think probably our minds are pretty good at forgetting the rotten things and remember the good.”

Calls involving children have previously been described as stressful for firefighters and Jordan describes the importance of separating himself from those calls:

[Y]ou realize there’s only so much you can do, only so much you should be doing. Like kids bother all of us. [...] But you kind of leave it right there, because you don’t want to get involved. You’ll get in way over your head. That’s something I can’t handle. I have certain limitations.

While Sean is aware that he chooses to not cope with some of the stress from work, he also recognizes that avoiding stress has a detrimental effect on his overall health:

I know right away I’m going to hide [stress]. It could affect my attitude and that attitude can affect the way I deal with people. So it’s going to affect my mental attitude, the way they perceive me. And it could affect ‘I don’t feel like working out today. I’ve had a bad day and want to relax’ kind of thing. So [stress] can affect [health] both ways.

Garry also describes his strategy of not addressing his stress and the process of self-evaluation he goes through:

I think on occasion maybe I should open up a bit more about a lot of this crap that goes on at work. And I mean call wise. But that’s just a normal re-questioning of your process to deal with things.

4.4.4 Gaining Perspective from Stress

In the context of coping with stress, several of the participants described the personal perspectives they have gained from experiences with the Fire Department. Part of their outlook arises in relation to their persona and image as helpers in the community (4.4.4.1). Additional perspective comes from the practical experiences at calls while working with victims and patients (4.4.4.2). Finally, some participants find comfort in their faith and have
a spiritual perspective that lightens their stress from the experiences they face while firefighting (4.4.4.3).

4.4.4.1 Helping members of the community

Throughout the interviews, participants often referred to themselves as “helpers” and that firefighting is fulfilling to them because it allows them to impact peoples’ lives (See Persona, 4.2.1). Many of the participants also described the feeling of helping members of the community and doing the best they can as a successful coping mechanism. As Garry says, helping others “helps to NOT make it stressful. It alleviates something. It makes a little more sense of it. You feel like you’ve done a little more than carry the body.” Jack agrees with Garry by saying:

[F]orget about the blood, forget about everything else that you see. How can I help this person. What do I know or what do can I apply to help this person. It reduces the stress.

Seth also describes his philosophy on this subject:

A personal coping strategy, and its not a cop-out, is when I’m at work... It sounds so corny, but I do the best I can. And if you do the best you can you don’t have any complaints.

4.4.4.2 Perspective from experience

Participants talk about gaining different perspectives from experience as a way to cope with the situations they face at their job. Gaining perspective is something that cannot happen without time on the job and experiencing certain situations. As Sean describes:

You’re dealing with a lot of grief. You see a lot of death. The first few deaths you’re like ‘that’s a dead body I just touched.’ After that, [...] your mind knows how to react better to it; you know how to deal with those people better. [...] It’s experience. If you asked a guy that was 6 months on the job, it would be different; he’d probably give you a different answer because he is experiencing a lot of those things for the first time. After you’ve experienced a few dead bodies, a few decomposing bodies you get used to them.
Seth also talks about the changes that occur over time and how, with experience and rank, he has learned to approach calls in a different manner:

There was a time when I was a new guy I’d go running in. But that’s your job as a new guy, to be like a hunting dog just dying to get out there and do it. [...] Those things have changed. It’s an evolution you go through. [...] I think just time and experience. You’re only going to run into a wall so many times before you look for a door first.

James describes how with time on the Fire Department, he has learned to realize that there are certain things that are out of his control. With this realization, he worries less and is less stressed with events on the job:

What happens out there, I have no control over so there’s no sense in me spending time worrying about it or stressing over it. It’s going to be what it’s going to be. I have no control over it. I think as time’s gone by, I’ve gotten to see that. I can let that slide off my back more so than in the beginning.

Time with the Fire Department and overcoming some rough periods, has also allowed Colin to take a more detached perspective when helping people at calls:

In the back of my mind now, I have a different outlook. [...] The outcome may not turn out as I want, as life does not turn out the way you want. I’ll just have to accept it, that not everyone wants to be rescued [...]. We’re the best chance these people have and if it doesn’t work out, you feel really bad, you feel awful. But you didn’t create the situation, you’re just trying to help the situation or help the people get through the situation the best you can.

Stressful calls over time have changed the way Aaron views his own life and the importance of making the most of your time:

Life changing in the sense of how I approach my job, and how I approach people. It was life changing how you look at your own life and your own mortality. They weren’t things that I didn’t already believe, but it reaffirmed that you’re only here for a period of time and it can be snatched away at any moment so don’t have any regrets as you go through life.
Time and experience has also given Spencer more confidence to perform his duties better: “Just a few calls under your belt. Once you do something once, you’re prepared. Nothing is going to be quite the same, but you know you have the ability to do it.”

Despite being newer to the Fire Department, Jeff already recognizes the importance of experience on the Department. For him, the smaller calls are preparing him for more serious and traumatic calls that will eventually come:

There’s always those little calls in between, they build you up for it as well. We get calls to car accidents to all the time and you think ‘Is this going to be a bad one? A gory one?’ And you show up and it’s a little fender bender. It kind of tones down a little bit.

4.4.4.3 Spiritual perspective

Some of the participants discuss spirituality as a coping strategy. For these participants, their spiritual beliefs help them to see the bigger picture of life, which in turn helps them to cope with the stressful calls they encounter at work. As Jordan describes:

[I]f it was meant that the person was going to live, they’d live despite what you did. If it was meant that he was going to die, he’s gonna die regardless of how well you did. [...] It’s a higher being that watches over everything. [...] We’re going to do anything we can do. There’s no justification for not doing your job. You’re going to do the best you can do. But the final outcome is not up to us.

Colin is more religious in his spirituality and explains that his faith keeps him focused at work:

I find, even here, I pray all the time. ‘Protect me, watch over us, help us do a good job; help the people we’re trying to help because you’re working through us.’ I feel that a person can never do anything by themselves. [...] It’s given me a lot of strength. Faith is a big thing for me. I don’t know what I would do without faith. That’s what gets you by.

Devon also attempts to explain his relationship with God and how it has helped him through some rough times at work,
It seems like the burden is lightened when I pray, when I communicate with God. [...] I’ve had some nights where if I didn’t have prayer, I probably would have had a lot tougher time getting through some events. [...] We all have limitations [...]. You can’t walk through a wall of fire, and you can’t save someone that’s been dead for 10 minutes. It’s a sad part, [...] but sometimes you can’t control it.

4.4.5 Discussion of Coping Strategies

The coping strategies identified by the firefighters illustrate the ecological nature firefighting; encompassing the individual, the firefighting family, the non-work family, and a spiritual presence. Coping strategies are defined by Moran (1998) as “specific behaviours engaged to deal with a stressor event or our stress reaction” (p. 38). Moran (1998) also defines coping style as “a more general tendency to deal with situations in a particular way” (p. 38) Participants of the present study identified a number of strategies which represent the approach coping style, avoidance coping style, and a third coping style named gaining perspective from experience.

O’Connor and Shimizu (2002) define approach coping as behaviours that deal with managing or addresssing the stressor. As described in section 4.2.1 (Helping Others), participants identify themselves as “helpers.” When they are unable to successfully help a victim or patient, the firefighters assess the situation as stressful, as described in section 4.3.6 (The Struggle within the Firefighter). When describing individual strategies used to cope with work-related stress, participants describe the mediating effects of successfully helping victims and patients. This is evident in the following quote by Seth:

A personal coping strategy, and it's not a cop-out, is when I'm at work... It sounds so corny, but I do the best I can. And if you do the best you can you don’t have any complaints.
As described in the discussion of the stress associated with firefighting, self-efficacy was described by Jimmieson (2000) as one’s belief in their ability to successfully complete the tasks associated with their job. Regehr et al. (2003) confirmed that high appraisals of one’s ability to successfully complete required tasks is related to lower levels of stress among firefighters. The self-attribution element of self-esteem, or the evaluation of one’s successes and failures, is strongly related to one’s evaluation of self-efficacy (Turner and Roszell, 1994). Participants revealed they are often more critical of their failures and less rewarding of their successes. Jordan, however, demonstrated the importance of taking confidence in one’s abilities in order to successfully cope with the stresses faced by firefighters when he stated: “I think self-confidence and self-esteem has a lot to do with how a person handles stress in whatever situation comes up.” Jordan’s confidence was not as evident in all participants’ descriptions of their abilities, and may be indicative of a gap in coping strategies designed to strengthen confidence in decisions and abilities among firefighters.

The firefighting family also provides support to firefighters both on- and off-duty, as the majority of the copings strategies described by participants include being with the firefighting family. The social cohesion of a strongly bonded group provides participants with opportunities for sharing, both of personal information and experiences of firefighting. Lazarus and Folkman (1984) define social support as “the nature of the interactions occurring in social relationships, especially how these are evaluated by the person as to their supportiveness” (p. 249).

Social support can come in the form of emotional concern, instrumental aid, information exchange and appraisal (Berkman, 1984). Increased concern for emotional well-being for co-workers is often a priority after unusual or stressful calls. In Section 4.2.1
Jordan described his concern the firefighters under his supervision when he stated he tends to “take care of the guys and make sure they’ve got the skills they need.” Instrumental aid involves receiving goods and services from one’s social support system (Berkman, 1984).

Jack described the willingness of firefighters to help each other with tasks, such as work around their homes, or in times of need. As he states:

If you ever approach somebody, like genuinely concerned about a certain situation, they would drop their own family to come and talk to you and try and get things straightened out.

Participants also described turning to co-workers for information. Jeff described going to co-workers for advise about home-repairs. As he stated:

I go to work and I can talk to them, like “do you guys know how to put hardwood floor down?” Instead of me worrying about it at home, like how am I going to do this? Who do I call? I can talk with them and they can kind of help me out.

Lastly, firefighters explained how co-workers have provided information to assist with self-appraisal. Colin describes a time when another firefighter helped him to feel better about himself and his actions at a call. As he states:

Actually, what really helped me was one of our own firefighters came and talked to me in the back dorm. [...] He said you’re a very good firefighter and you do a good job, you’re a good person and everyone likes to work with you. [...] That means a lot when your peers tell you that.

As suggested by Colin, and confirmed by the other participants, receiving support at work and the ability to identify with co-workers is important for coping among firefighters. In a study examining the relationship between sense of community, social support, and stress among firefighters, Cowman, Ferrari, and Liao-Troth (2004) found that those who are satisfied with the support received by co-workers experienced less job-related stress than firefighters with lower levels of social support. Although participants in the present study did
not directly discuss the specific mediating effects of support from peers, it is evident through their testimonies that social support within the firefighting family is important.

Another approach coping strategy involving the firefighting family is Critical Incident Stress Debriefing (CISD). CISD is a peer counseling session, which provides information on various stress reactions after individuals have been exposed to a critical or traumatic incident (Harris, et al., 2002). Previous research on CISD has yielded mixed results as little reliable evidence has been presented suggesting debriefing prevents negative psychological reactions. Also, immediate post-incident deb briefings are being questioned as witnesses to critical incidents may need a period of processing before any form of counseling can be effective (Harris, et al., 2002). Devon explains the debriefing process for the Department:

A diffusing is the initial meeting where everyone gathers and they explain what they did, how it affected them. [...] The debriefing is the next phase where it’s a little more in depth and they might call in a professional. [Diffusing is] a little less formal, and often times the diffusing all that’s required. And everyone feels better.

Similar to the findings of Harris et al. (2002), participants of the current study portrayed inconsistent views of the CISD process. Garry provided a different perspective of the debriefing process when he said: “[it’s] not for everyone either. I can only tell you my opinion, I don’t need an outsider coming in, or even one of our guys. Sometimes it can be the wrong guy.” Rather than creating a reliance on CISD, Tangherlini (2000) suggests that emergency workers often resort to, and prefer, informal storytelling with co-workers, which allows them to seek closure to events without the formalities of debriefing procedures and pressures from superiors. Based on the testimonies of the firefighters in this study, a general conclusion regarding the specific feelings toward the current CISD program could not be reached.
Literature often reports the effects of trauma endured in the workplace and its spillover to the family unit (Repetti, 1989; Murohy et al., 1999; Shakespeare-Finch, Smith, & Obst, 2002); however, less research has been done to illuminate the role of the non-work family as a coping resource. Similarly, participants of the current study identified the strain placed on the non-work family when one parent or partner is a firefighter. When discussing the role of the non-work family in the coping process, three trends emerged. First, some participants described relying heavily upon their non-work family to cope with work-related stress. Second, a group of participants described a comfort in knowing their families will provide unconditional support when coping with stress. These participants, however, like to keep work and their non-work family separate and are reluctant to reveal many details of traumatic or stressful events that occur at work. Third, one group maintains complete separation between work and the non-work family. As a result, the non-work family serves as a distraction and plays a very minimal role in helping firefighters to cope with work-related stress.

According to Repetti (1989), social withdrawal, particularly at home, is indicative of a supportive spouse or partner. As the author states:

Under supportive conditions, social withdrawal may be a means of controlling internal and external cues, with the ultimate objective being recovery from stress, or the return to a baseline emotional and physiological state. (p. 658)

Therefore, when the participants of the current study describe withholding information and details of their work from their families, the families of origin may in fact be providing the most important support by allowing the husband, partner, or father to re-establish an emotional and physical equilibrium.
However, Murphy et al. (1999) reported a decline in social support from families outside work, particularly among firefighters who also reported labour-related strife. The authors suggest firefighters may consider conflict at home to be safer than conflict at work, due to the strong reliance upon teamwork among firefighters. Therefore, Murphy et al (1999) suggest conflict may be displaced to the firefighter’s significant other when a partner or family member is less supportive of work-related stressors. This is an important finding as similar work-related elements surfaced in the current study. Many participants described frustrations with the City in Section 4.3.5, specifically with contracts and the condition of the equipment. Therefore further investigation is needed into the role of the non-work family when assisting a firefighter to cope with work-related stress. Also, coping aids must be provided in order to explain to the families and partners the stressors faced by firefighters. The aids can help families to understand stress and to help the firefighters in their families successfully cope with work-related stress.

Avoidance coping includes behaviours that help the individual to deny or withdraw from the stressor (Holohann et al., 1996). Following the Oklahoma City Bombing in 1995, North et al. (2002) found that rescue workers generally turned to avoidance coping behaviours such as alcohol consumption, while approach coping behaviours such as social support and mental health treatment were used to a lesser degree.

Avoidance coping strategies are often depicted in the literature as negative forms of coping and may be harmful to the individual, both physically and emotionally (Boxer & Wild, 1993; Murphy et al., 1999). The findings of the current study, however, suggest that avoidance coping strategies, such as social withdrawal, socializing with other firefighters, humour, and consumption of alcohol all serve a practical and useful purpose to cope with
work-related stress. Social withdrawal and engaging in solitary leisure pursuits, as described by the participants, may serve as a distraction from stressful events at work (Repetti, 1989).

Within the firefighting family, avoidance coping is noted with the consumption of alcohol with other firefighters as well as the use of black humour. Many of the participants confirmed that “going for drinks” with co-workers is common, and that some firefighters rely heavily upon alcohol to cope with work-related stress. However all participants identified themselves as not being dependent on alcohol for coping. In 1993, Boxer and Wild found that 29% of their sample of firefighters in the United States met or exceeded alcoholism screening scores, suggesting a high dependence on alcohol among firefighters. Murphy et al, (1999) also advise that there is a potential for an over-reliance on alcohol as a coping strategy among urban firefighters. However, in Section 4.4.2.3 Jack described the comfort firefighters gain with each other over drinks, and will therefore use this time to discuss their work-related stress. As he previously stated:

There’s quite the little diffusion process that goes on over a beer. You talk about calls, you talk about what may have been done better, what could have been done different.

Another common coping strategy was the use of humour at the fire hall. Where stress is often linked to psychological distress, humour provides a buffer to protect the individual from the negative effects of stress. Humour is a strategy often used to distance an individual from negative experiences (Abel, 2002). In a study of over 50 Vietnam prisoners of war, the participants described humour as a contributor to the minimal mental effects after their release (Henman, 2001). The research by Henman (2001) also suggests the prisoners of war used humour as a coping mechanism and a way to take control of their situation.
In the current study, participants discussed the use of black humour to cope with the situations and events associated with firefighting. Black humour was defined by one firefighter not associated with this study as a normal reaction to an abnormal situation. Thorson (1993) describes Gallows humour, or black humour, as defiant and can be used as an escape from the tragic realities of people’s lives. According to Thorson (1993), black humour “originates among people who continually face danger or death, providing them with a means of psychological compensation and a passive-aggressive resistance that serves to bolster morale” (p. 19). With Thorson’s description, it become clear why black humour is used among firefighters as a coping mechanism. Participants of the current study confirm that the humour “bolsters moral,” as many of the positive times in the fire hall revolve around humour, as described by Garry:

There’s a lot of black humour that goes on. So those down times are pretty jovial. [...] There’s a lot of humour in the fire hall and everyone is kind of messing around all the time, and that helps.

The final coping style described by the participants is gaining perspective through experience. This coping style describes the acceptance of stressors participants have gained with experience and time. Gaining perspective captures a view of the events and circumstances related to the calls attended by firefighters. These views, as described by the participants, help them to understand their decisions and actions, while preparing them for similar situations in the future. Nearly all the participants described some form of perspective they have gained over time. Some of these perspectives incorporate elements of spirituality, while others adopt a more religious perspective. According to Lawler and Younger (2002), spirituality and religious involvement provide resources to increase one’s
sense of purpose and meaning in their life, which in turn provides resiliency and resistance to stress-related illnesses.

Spirituality is an individual experience that encompasses transcendent beliefs and values (Hodges, 2002). The following quote by Aaron is representative of the spiritual perspectives gained by firefighters as they accumulate time and experience with the Department:

It was life changing how you look at your own life and your own mortality. They weren’t things that I didn’t already believe, but it reaffirmed that you’re only here for a period of time and it can be snatched away at any moment so don’t have any regrets as you go through life.

A few of the participants also described gaining a presence when faced with stressful situations. This strategy was described by participants as taking place on the individual level and with the non-work family, but not with the firefighting family. Some participants described turning to the Christian religion to gain a sense of peace and the ability to cope with the stress associated with firefighting. Devon described his religious beliefs and how they have helped him to cope with work-related stress:

I’ve prayed on occasion. It’s part of my beliefs. [...] I believe in Jesus Christ, so a lot of times that’s been one of my great stress reliever is prayer. [...] It helps. It’s unfortunate seeing death and destruction and all that crap.

This identification of religions as a coping strategy is consistent with the writing of Folkman and Moskowitz (2003). The authors explain religion influences the way people appraise and respond to stressors. Similarly, in a study by Kloosterhouse and Ames (2002), families believed their religious practices helped them to cope with stress, while their beliefs and practices influenced their decisions to rely upon religion as a coping strategy. The authors suggest that religion and general spirituality may be effective coping strategies because a) primary appraisals of stress are altered to reframe the meaning of the crisis; b)
there is an improved sense of control; c) the individual’s self-concept and personal identity are modified to reduce the threat of the stressor; and d) the emotions created by the stressor are addressed (Kloosterhouse & Ames, 2002). The discussion of participants’ discussions of spirituality and religion was not able to support or refute the conclusions by Kloosterhouse and Ames (2002). Spirituality and its effect on coping among firefighters may be an area for future research.

According to Parks and Folkman (1997), meaning is comprised of two levels: Global meaning and situational meaning. Global meaning refers to the individual’s beliefs and goals. It is through global meaning that an individual gains an understanding of events from the past and present, and influences their expectations of the future (Park & Folkman, 1997). Jeff described the global meaning attached to his career and its associated stress. He described in his interview how he believes he will cope with events he has yet to face, but knows will come eventually. As he explains, his beliefs and experiences have influenced the way in which he believes he will cope with future stresses:

I’d say I’m generally well prepared. I’ve seen a lot of pictures and stuff; I’ve been to a few calls where stuff’s been somewhat bad. I know what to expect in it. [...] I’ve never dealt with a baby dying yet. I expect to happen sometime in my career. As for dealing with it, I don’t know how I’m going to act. I figure, hopefully it won’t be too bad because that’s the job I’m in.

Situational meaning is more event-specific than global meaning, and is based on the person-environment transaction. Situational meaning closely influences one’s primary appraisal of stress (Lazarus & Folkman, 1984), which in turn will influence the choices an individual makes to cope with the demands of the stressor (Park & Folkman, 1997). The appraisal of an event to be non-significant is related to situational meaning. The detachment many participants describe when faced with traumatic calls was a finding that emerged from
the interviews. The lack of personal meaning attached to an event allowed participants to
distance themselves from the stressful elements of firefighting. As Aaron described:

I have no control over so there’s no sense in me spending time
worrying about it or stressing over it. It’s going to be what it’s going
to be. I have no control over it. I think as time’s gone by, I’ve gotten
to see that.

4.5 Health

Participants revealed their thoughts about health, how their job affects their health,
and their ranking of their overall health (see Table 3.0). Below is a description of how the
participants define health and what is important for them to stay well. First, there is a
discussion around the overall definition of health. Here, participants speak of health more
generically and describe how they define their own personal health (4.5.1). This discussion
is followed by more specific definitions of health offered by participants. This includes:
physical health (4.5.2); mental health (4.5.3); social health (4.5.4); and spiritual health
(4.5.5). It is important to note, however, that not all participants agree with what defines
health. Some approaches to health are more tangible (for example, physical health) while
others are more difficult for participants to describe (for example, spiritual health). Figure
13.0 is a visual representation of the range of participants’ descriptions of their health.
(Text continues on the next page.)
Figure 13.0  Health, as defined by the participants
4.5.1 Overall Definition of Health

Many participants spoke of health in a broad sense and considered their health to be a product of many aspects, including their physical abilities, mental health, and confidence. Garry describes what he considered to be health while answering the questionnaire prior to the interview: “Before I put the ‘X’ on the paper, I thought this whole thing is based on stress or whatever. There are different components, right? Physical, mental and all the rest.”

James also believes that his health is a balance of both his physical and mental state:

If you have that ability, everything else falls into place, both inside and out. [...] [F]or me, that mental role playing that and physical health go hand in hand. I can see what it is I’m going to do. My mind is as active, if not more so, than my body in what I do. If I do it physically once, I’ve thought about doing it 1000 times.

To Kyle, overall health is important as it influences the way he is perceived and how he acts:

It’s just an image thing, but I think its also feeling healthy, you’ll look healthy, you’ll act healthy, and people will have more confidence in you [...] Health has always been an issue and I’m aware of the importance of keeping health up.

One’s perception of health can change over time and with experience on the Department. Seth describes this change in perception over time: “That’s my perception of health now [...]. It’s not staying buff, its just staying healthy.” Colin agrees with Seth as he describes his overall health and his goal of living a long and healthy life:

My mental and my physical state. I’m not as strong as I used to be because I don’t lift weights anymore, but that doesn’t bother me. I’m looking at long term health. My heart, my cardiovascular which I think is more important.
4.5.2 Physical Description of Health

Although many participants describe health as comprising a variety of components, they also spoke in detail about the physical aspect of their health. Specifically, participants spoke of physical injuries (4.5.2.1), the fitness and physical strength needed to do their job (4.5.2.2), their diet and weight (4.5.2.3), and their ability to be active off the job (4.5.2.4).

4.5.2.1 Physical injuries

Participants describe how injuries they have sustained both on and off the job have impacted their perceptions of their physical health. Jack sustained an injury while on duty, which affected his ranking of his overall health. As he states:

The wellness, for the most part, I've had no problems caused by fire or smoke inhalation or anything like that. It was just the one fall, specific to the last 12 months. And that's why it rated so low.

Jordan also describes how numerous injuries have impacted his perception of overall health: "I’ve broken way too many bones to run. I can’t do weights because I broke my arm. Just things aren’t normal anymore." Similarly, Spencer explains how, with age and previous injuries, his physical abilities are not the same as when he was younger:

I’m getting older. You feel it. I used to play a lot of sports when I was younger, and I’m starting to regret it now. I still play hockey Tuesdays and Fridays with the guys at work. Instead of going home or going to the YMCA and getting in the hot tub, you go and have a beer and by the time you get home you can barely move. That didn’t happen 8 years ago. Some of the joints aren’t working like they used to.
Devon explains that it is important to stay physically fit in order to avoid injuries, such as those described by Jordan and Spencer. He suggests fitness is especially important as he and others age: As he states:

Now, I'm pushing 40 so it's getting even more important to stay fit. If I get an injury now, I don't recover nearly as quickly as I used to. If I can stay strong, I don't get hurt.

4.5.2.2 Fitness and strength needed to do the job

According to the participants, being physically fit and healthy is important to successfully complete the tasks required of a firefighter. As Garry describes, firefighting is a competitive job:

It's a very competitive field and [...] there's one hose on the side of the truck and the first guy there gets it and gets in the building. [...] Everyone wants to be in there.

In order to successfully compete and work with others, physical health is important. Colin offers a specific description of the tasks required of the job and why it is important to be physically healthy:

It's a young man's job. You have to stay in shape because there's a lot of pulling, lifting [...]. Carrying people out is physical. Tearing down walls is physical. Ventilating is physical. [...] Even the medical aspect you have to lift a person; that's physical.

As Spencer describes, the duties of firefighters requires one to be in good physical condition, especially as one ages:

I don't know how some of the guys at 55 do this job. Things are getting harder. When you get out of that fire when you've been crawling around, you can barely stand up anymore because you were crawling around for 15-20 minutes. Then you have to roll up hose and stuff like that. You see some of these older guys who are holding their backs. I'm not quite there yet, but I'm starting to feel it. It's a tough job. [...] Right now I have all the confidence in the world. You know you're in shape and you know you're capabilities. You know you can walk in a fire and just go until
you’re bottle is done. [...] It’s a long career and a very active job. It’s a young man’s job. But unfortunately you have to stay there for 30 years.

Jeff agrees his physical fitness is essential to perform his duties as he recounts his experience of fighting his first house fire:

I was just dying after that. I was coming outside huffing and puffing. I ended up sitting down for a good 20 minutes half an hour after that. [...] I mean I don’t know what would have happened if I hadn’t been in the shape that I was.

James is also confident in his physical fitness, which translates into confidence to do his job:

I feel very confident in my abilities to do the job. I don’t have to worry about hauling someone up the stairs, or carrying a piece of equipment or getting from A to B without huffing and puffing. That in itself is a big stress relief. I do those things and I don’t have to worry about it.

Spencer summarizes research he has done relating physical health to job performance and why it is important to have the support of the City to maintain the fitness levels of the firefighters.

I’ve read a few studies about the wellness part of it [...] They say for every dollar you put into the wellness, you get $2 back on medical and all that. [...] Our city doesn’t realize that. They help us out a little bit for equipment, but they think its coming out of their pocket and they’re going to loose that money for ever. But you get a guy who is too busy at home; he won’t get on that treadmill. He sees the treadmill in front of him; he’ll walk on it at least, as opposed to not doing anything.

Due to the physical nature of firefighting, some participants described the obligation they feel to maintain their physical health, specifically their strength and fitness. Jack describes how being a firefighter includes the responsibility to sustain his fitness levels:
I think just through work that there's a bit of a necessity to maintain a certain level of fitness. You have that responsibility, not just to yourself, but to the community.

Kyle expresses his belief that being able to do the job required of firefighters is necessary to maintain a positive reputation with the public. In order to be able to do the required job, firefighters must be in good physical shape:

As far as public relations and the image we portray, I think it is good to have guys who are physically fit and look like they perform the duties that are expected of them.

A few of the participants acknowledge that their fitness and strength has benefited from their job and it's physical tasks. Seth also believes that, because of his job on the Fire Department, he is in better health than others the same age, not doing the same job:

When I look at my friends, especially the guys who aren't firefighters, I'm in much better shape than they are. You know, physically, the whole thing.

Similarly, James explains that the Fire Department has offered him a great opportunity to maintain his physical health through training for competitions:

The Fire Department has offered us the opportunity and the ability to be healthier both mentally and physically. And, if it wasn't for the fire challenges I do, I would be doing something else, but because it's job specific, it's really given me motivation and determination to be better. [...] This is just closer to home, which is why I'm putting more of an effort into it. And therefore my overall health is better for it.

Due to personal interest in fitness, many of the participants are unable to identify a change in their physical fitness and strength. Spencer describes how looking after his physical health is part of his everyday routine:

It's just part of my lifestyle. I go to the gym everyday. I'm involved in training for the fire games. As far as extremes on the Department, I'm on the healthy extreme. There's some people in
the middle and some people on the other end. It’s just been a part of my life for such a long time.

Devon also incorporates physical fitness as part of his daily schedule. As he explains, when he has not been physically active, he has felt guilty:

*I exercise pretty regular. It’s something I know I need to do. It’s become a habitual way of life. If I’m not playing hockey one night, I’ll exercise that day. [...] Even if I’m watching TV, I’ll try to get some pushups in or something. I feel almost guilty if I haven’t exercised. It makes my whole wellness. I feel better. The fitter you are, the better you feel.*

Jordan, however, disagrees that that being physically fit is a sign of one’s ability to do the job or of being healthy:

*If I weigh so much I can’t do my job, I’d say I was in bad health, but just being miserable because you’re overweight by a couple pounds or you can’t run around or for a couple of miles, to me that doesn’t mean you’re not healthy.*

**4.5.2.3 Diet and weight**

Similar to physical fitness and strength, many participants acknowledged the importance of watching their weight and maintaining a healthy diet. For Kyle, physical appearance is very important in earning and keeping the respect of the public. Part of physical appearance includes maintaining a healthy weight:

*Physical appearance. That has a bearing on how people will perceive you at the calls. They don’t want to see guys coming in who are obesely overweight.*

Jack has also become aware of the importance of maintaining a healthy weight since being hired on to the Department:

*I think that I’ve just become a bit more conscious, you know. [...] Maybe not having an extra bag of chips, or whatever it may be. Just being able to say, you know what, maybe I just don’t need it. Being a little more conscious of it.*
Seth agrees that maintaining one’s weight is important, however he acknowledges that it is more difficult to do this as one ages:

[A]s a young guy we all take health for granted. And now I don’t. I find it harder to stay slim. I could eat with a snow shovel kind of thing. I’ve always been able to burn it off, but now I can’t do that anymore. Everything takes a little more effort.

4.5.2.4 Being active off-duty

Many participants described their time away from work and the activities they like to pursue. To them, being physically active during leisure time helps them to maintain a healthy state. For example, Seth describes the reasoning for his overall health ranking on the questionnaire: “I ride my bike to work every day. I’m up early every morning. It’s not that I lead a better lifestyle, I just feel better all the time.” Kyle also describes how keeps physically active during his free time:

I used to like to run a lot. I do some biking now and play some hockey 2 or 3 times a week. We have a family dog, which has been great for walking.

Jeff is physically active when he is away from work. He is able to see the connection between physical activity and successful coping, which benefits him personally and professionally. As he explains:

I’ve tied the two together, like the stressful event I’ll go do something that’s good for my health, so it all ties into together. I do the sports and stuff because I enjoy them. I like to know that I’m healthy and that I can go out there and skate around the ice. But also because I can do that, I know it will help with my job. I can climb up the steps of an apartment building or whatever.

Jordan, however, describes his belief that some of his co-workers who are considered more physically fit do not work as hard as others who would be considered less physically healthy:
If you want something done short term, they’re fine but any kind of work long term, get someone who’s out of shape, who smokes and you’ll probably get the job done a lot quicker. I’ve built a couple of houses, like my own home. I did everything. I had no problem working 10 to 12 to 14 hours a day, where most of these guys would crumble trying to keep up.

4.5.3 Mental Description of Health

Being mentally well is part of their overall definition of health for many of the participants. Being able to successfully cope with stress (4.5.3.1) and mental perceptions (4.5.3.2) were defined as being part of one’s mental health.

4.5.3.1 Successfully coping with stress

Part of being mentally well includes the ability to cope with stress. For Sean, being healthy means having as little stress in his life as possible, “Having as little stress all the time. You’ll have the little everyday stresses, but having as little as stress as possible.” Garry and Jordan agree that being able to cope with stress is a sign of good health. Garry describes his definition of health: “Coping jumps out. I think I handle that pretty good.” Similarly, Jordan answers the same question by saying:

It’s more emotional than it is real. [...] To me, if you can do the job and you can do it well and not just a job, but you can handle life, then you’re healthy

Colin describes the role mental health plays in overall health. Specifically, he describes the role of successful coping:

[There is a definite relationship because if you can control your stress you are going to be healthier. That’s the relationship. First you’re going to have stress. If you can cope with it, you’re health will not be affected by it, hopefully. Or it will be minimally affected. [...] When something stressful occurs, I’m going to try and say is this really worth getting upset about? Is it something I can handle? How do I handle it? Try and deal with it and move on. And you’ll see the benefits.
Along with being able to cope with stress, to be healthy is to have a positive attitude. Sean and Spencer connect a positive attitude with being physically active. Sean says: “Just being happy most of the time, if you can, and being in fairly good [physical] shape.” Spencer elaborates by saying:

Once you bottom out, and not getting active, it goes a long mentally too. If you’re not doing something exciting physically, I think that brings you down a little bit mentally. You’re not as chipper.

Being mentally healthy, however, is tested on the job with the constant increase and decrease of one’s heart rate due to calls. Spencer describes how this physical strain affects his mental state:

You’re going from 50 beats per minute heart rate when you’re sleeping or less. Then you’re jumping up and things go up to 80. I’ve had a heart rate monitor on before. You’re up to 120 by the time you get to the truck without doing anything. Then you have to [...] go in a fire or just help somebody out. Just up and down, up and down. I think that really wears on you mentally.

4.5.3.2 Perceptions of self and life

Participants’ mental states have been shaped by participants’ self-perceptions and perceptions about life. Jordan acknowledges that his perceptions of himself and of life have changed due to his experiences with the Fire Department. As reflected in the following quote, he describes himself as becoming more cynical:

I’m just cynical about other people and about life in general. [...] I look at life quite differently. Like life in a lot of ways is cheap. People die, and that’s the way it is. Never in my life would I have realized the types of people that are out there. [...] There’s a whole bunch of people out there that I can’t understand how they can live, especially the way that they do. It’s just incredible.
The situations and experiences of being a firefighter lead to a general understanding and view of life. For Jack, being a firefighter allows him to see another side of life and with that is a sense of perspective for events in his own life:

I got a flat tire, or damn, I’m late for a meeting, it’s ‘oh well’. I could be the person I was just helping last night. I could be a lot worse off. [...] Don’t sweat the small stuff kind of thing.

Sean also describes how firefighting gives him more insight into the diverse situations life presents.

I look at the city, I look at the people living in the city, just because I can drive around most places and say I’ve had a call at that house and it looks beautiful from the outside, but it’s a hole on the inside. [...] I think it has changed the way I look at things across the board. [...] I think it’s more just perceptions of how life goes about. You think that there’s a lot more bad than there is good. Although, not saying there isn’t a lot of good, but you do see a lot more of the bad side of things than the good side of things.

4.5.4 Social Description of Health

As the previous discussion in Persona has revealed, there is a strong social aspect associated with firefighting. A small number of the participants acknowledged the benefits they have gained from the socializing on and off the job. Kyle explains the increase in social confidence he has experienced since he began his career:

I think I have more confidence in a crowd of people I don’t know. I feel more comfortable now than I used to. Meeting new people I feel more comfortable. I don’t know if that’s job related or just age. That’s a little different than I was at the beginning.

Sean also acknowledges his confidence has increased and he explains the benefits this has on his overall health:

I used to be fairly shy; I started to be more open now. [...] You can’t keep everything inside. You do have to deal with it a little more and talk about it a little more.
Spencer agrees that his confidence in groups has increased, although he notices the improved confidence most when he is in groups of children:

I think I’m better with groups, groups of kids. [...] I find myself a lot better with kids just from the fire hall. You know how to talk to the 6 year olds compared to the 10 year olds. [...] I think I speak better with kids and I can relate better because I’m a big kid myself.

4.5.5 *Spiritual Description of Health*

As participants have described in Section 4.4.4, their faith and spirituality help to cope with work-related stress, however two of those participants also consider their spirituality essential to their health. As Colin describes:

I consider spiritual too. I think you have to throw that in there too. I think there’s more to life on this earth than being born and dying.

Devon is more specific as he describes the role his faith plays in his overall health:

Sometimes I get off track spiritually, and it’s easy to do. It’s human nature to want to go that road alone. And I know when I’m not spiritually connected with God, I sense it. Things feel a little bit more edgy, and a little more hectic. For me, it’s really important to continue to keep my relationship with God close. It really helps my mental fitness. A lot of times I won’t neglect my physical fitness, but I’ll neglect my spiritual and my mental fitness.

Devon then continues to explain how his spiritual health is becoming more important as he ages

[A]s we’re getting older, I’m realizing for myself personally the need for better spiritual health. I’ve always had a pretty good hold on my physical health, but I think [...] the spiritual part of it is becoming more important to me as I’m getting older. Maybe it’s because I’m closer to death!
4.5.6 Discussion of Health

The World Health Organization defines health as a balance of physical, mental, social and spiritual well-being. This definition assumes health is beyond the absence of disease or illness (WHO, 2004). The participants of this study also acknowledge health to be more than physical wellness and include mental, social and spiritual well-being in their definition of overall health. The description of social and spiritual well-being, however, were less rich than the descriptions of physical and mental wellness. The lack of discussion regarding social and spiritual health is interesting. Previous findings, specifically in Section 4.4 (Coping), indicate social support and gaining perspective from experience as important strategies for successful coping; yet few of the participants feel these elements contribute, or are part of, their overall health.

Many of the participants in this study identified a link between two or more of the elements of health. For instance, some participants acknowledge the link between physical activity and one’s mental state. Others identified spirituality as a contributor to their mental health. While participants identified links between the different dimensions of health, they were also able to connect one’s overall health to their ability to cope with work-related stress. For example, many participants described their fitness routines and how these routines contribute to their coping of stressful events. As Sean described:

If I’m going to work out, I’d rather run. I find it gives you time to think about stuff, you let your mind wonder as you’re running. I guess slightly, yes, it is a way to relieve stress.

The identification of the various elements of the firefighter’s health is similar to the Wheel of Wellness and Prevention, presented by Witmer and Sweeney (1992; see Figure 8.0). The main themes of “the Wheel” convey a wholeness of mind, body, spirit
and community, while drawing information and concepts from psychology, anthropology, sociology, religion, and education (Witmer & Sweeney, 1992).

Wellness is described as a balance of five life tasks: spirituality, self-regulation, work, love, and friendship. At the center of the wheel is spirituality (Witmer & Sweeney, 1992). Participants in the current study, who identified spirituality as part of their overall health, also comment on its central role in their lives. Similar to the Wheel of Wellness and Prevention, the Daaleman et al. (2001) model suggests that spirituality is a necessity to a positive evaluation of one’s overall health, in particular when coping with stress. Daaleman et al. (2001) state that spirituality will effect elements leading to a positive evaluation of one’s ability to cope, thereby leading to a positive evaluation of one’s health.

Self-regulation is the second life task of the Wheel and is comprised of sense of worth, sense of control, realistic beliefs, spontaneous and emotional responsiveness, intellectual stimulation, sense of humour, and physical fitness and health habits (Witmer & Sweeney, 1992). Participants who described elements of self-regulation did so in association with the other themes, particularly coping. For example, sense of humour was used as an avoidance coping strategy, while physical fitness was identified as an approach coping strategy and realistic beliefs are associated with the coping style of “gaining perspective through experience.”

Work is the third life task as it provides psychological and social functions, in addition to providing economic stability (Witmer & Sweeney, 1992). During the interviews, participants described the psychological functions of work, specifically the reliance upon co-workers as a coping resource. Participants also addressed the social
functions of work as they describe the sense of family and community on the Department.

The final two life tasks are friendship and love. Witmer and Sweeney (1992) describe friendship as a way to connect with other human beings. Love provides an opportunity for nurturing, as an individual is cared for through intimate relationships (Witmer & Sweeney, 1992). Participants described social networks comprised of friends and partners (wives and girlfriends), which assist the firefighters to cope with work-related stress.

As the discussion of health indicates, the ways in which the participants describe their health is closely related to the other themes that emerged through the interviews. Based on the responses from participants, a perception of health appears to be an outcome of the inter-dependence of the former themes.
CHAPTER 5.0: DISCUSSION AND CONCLUSION

Just like I tell the guys, especially when they start, 98% of the time you are way over paid for what you do, but the other 2% of the time, they couldn’t pay you enough to do it. It shouldn’t be allowed that anyone is put in that situation. It just isn’t right, almost. But that’s our job.
(Jordan)

As this quote from Jordan and the testimonies from the participants suggests, firefighting is an occupation of great variability in the nature of the stressors to which firefighters are exposed. There are situations that are etched into the minds of firefighters, while events that have been forgotten have helped to develop the firefighter into what he is now. To describe a typical firefighter is difficult, as firefighting is a career on which each individual has placed different significance and perspective. In general, firefighting is a career that personifies qualities within the individual, such as courage, strength, and the desire to help others. Firefighting is also a career upon which high expectations have been placed, both by the community as well as by the firefighters themselves. As a result of these expectations, additional strain is placed on the firefighter as the individual strives to fulfill this image.

Where the literature (e.g. Ettner & Grzywacz, 2001) indicate negative health effects of workers with jobs of greater constraints and stress, the general perceptions of health reported by firefighters in this study were generally high despite indications of high stress. While one might expect to find indications of exhaustion as described by Selye (1991) to be the result, the findings of the current study indicate a different outcome for firefighters.
Firefighters explained that stress originates from multiple environments including stress from the firefighting setting and stress associated with the actions of the City. As a result of these stressors, participants described a sense of stress within themselves, including feelings of helplessness and critical evaluations of actions and decisions. As this study reveals, understanding of the stress-coping relationship among firefighters must consider the transactional process that occurs as the individual interacts with the multi-layered environment associated with firefighting. This includes the individuals that they serve, the context of the fire hall, their outside-of-work family and the broader community. This transactional process has an impact on the firefighter's perception of themselves, or their persona. In addition, findings reveal that persona of the firefighters then play an important role in the stress-coping process. The participants in the current study described their perceptions of stress levels, their abilities to cope, and how the stress-coping relationship impacts their overall perceptions of health. Participants described the relationship of coping to health as incorporating elements of the mind, body, and spirit. The purpose of this final chapter is to present a model of the relationship between firefighter perceptions of stress and coping and health. This chapter will also place the model in the context of prior research to expand our understanding of stress and coping. The chapter concludes with a discussion of the strengths and limitations of the current study while providing recommendations for future research.

5.1 An Ecological Model of Stress, Persona, Coping and Health

Based on the findings presented in Chapter 4.0, a model has been created to capture the relationship between stress, coping and health and the role played by the firefighter identity in this process. The current model of firefighter stress and coping
suggests that the entire process is a continuous pattern in which the final evaluation of one's health ultimately prepares one for future stressors.

The model shows visual similarities to the CATS model (Ursin & Eriksen, 2004). The CATS model is a cognitive activation theory of stress, which simultaneously demonstrates the physical and psychological responses to stress. The CATS model of stress is presented in a loop, representing the cyclical nature of stress (Ursin & Eriksen, 2004). Similarly, the current model is also cyclical in nature as the overall evaluation of health has an impact on future encounters with stress as the individual has learned from past experiences (Ursin & Eriksen, 2004).
Figure 14.0  Social ecological model of stress, coping, and health and the relationship to self identity
As indicated in Figure 14.0, the model begins with the identification of a stressor. As described in Chapter 4.0, stress within the firefighter (Section 4.3.6) includes feelings of helplessness, being critical of self, and the struggle to maintain focus. Stress associated with firefighting includes job-related stressors (Section 4.3.2) and stressors within the social network of the firefighter (Sections 4.3.3 and 4.3.4). Finally, stress associated with the City includes elements of firefighting that are determined by the Corporation of the City and are largely beyond the control of the Department (Section 4.3.1). Participants spoke to the five different forms of stressors identified by Wheaton (1999): sudden trauma, life change events, daily hassles, non-events, and chronic stressors. Of the five forms of stress, there were sharp differences in the experiences of chronic stress and traumatic events experienced by firefighters with over 10 years with the Department compared to those with fewer than 10 years. Firefighters with more than 10 years expressed higher incidences of chronic stress and traumatic events. The negative effects of chronic stress have been highlighted by Selye (1991) in the General Adaptation Syndrome and in the CATS model by Ursin and Eriksen (2004). Both these models demonstrate the negative impact on health from prolonged exposure to stress. This pattern in the study highlights the importance of examining stress among firefighters, as these stressors have significant consequences for the individual as he/she continues with his/her career. According to Daaleman et al. (2001), the introduction of a stressor creates a change in functional status, which includes changes in physical states as well as disruptions in social and psychological contexts. In the current study, participants described the stressor coming from multiple layers of the environment, including self, work, family and community.
The "persona" theme (Section 4.2) captures the participants' perceptions and
descriptions of themselves as firefighters. The persona and perception of oneself as a
firefighter emerged as being important to cope with stress, and therefore affect one's final
perception of health. Belonging to the firefighting family changes participants' perceptions
of events and, as a result, their evaluations of coping abilities are also affected, as they are
"de-sensitized" to situations they witness.

Participants described in rich detail their connection to other firefighters, their
dependence upon them in times of need, and their willingness to help co-workers. In a study
of police officers, Dick (2000) described the process of adopting organizational beliefs and
stated: "when people join organizations, they acquire not only new skills but also new
identities and ways of thinking" (p. 227). Similarly, Daaleman et al. (2001) suggests that
core beliefs promote a belief in a transpersonal self, while in the current study, persona
includes perceptions and descriptions of self as a firefighter. As Daaleman et al. (2001)
describe, core beliefs are the "sources that grounded and maintained an interpretive structure
through which participants viewed their life events and positively framed their experiences"
(p. 1506). Self-esteem, as described by Turner (sp?) and Roszell (1994), also relates to core
beliefs, as the individual makes judgments of reflected appraisal, social comparison, and self-
attrition. These judgments can be used as a way to frame experiences and life events
(Daaleman et al, 2001).

As described in Section 4.4 there are three coping styles identified by the participants.
These styles are approach coping, avoidance coping, and gaining perspective from
experience. These are depicted in Figure 14.0 in arrows 1a, 1b, and 1c. Daaleman et al
(2001) describe Information Gathering and Processing as well as Interpretation and
Understanding are central to the process of to Gaining Perspective. As Daaleman et al (2001) describes, when interpreting and understanding, participants seek to “make sense of these events within their life contexts or schemas” (p. 1507). In addition to information processing, additional strategies are incorporated such as seeking social support and physical activity. Approach coping is defined as acts and behaviours that deal with managing or working through the stressor (O’Connor & Shimizu, 2002). Avoidance coping includes strategies to withdraw from, or deny the existence of, the stressor (Holahann et al., 1996). It was clear from the stories of the participants that in some instances, avoidance coping is an essential element to successful coping. There is a time and a place to react to events; however, it is not when on a scene, tending to a patient. Therefore, in order to successfully meet the demands and requirements of firefighting, it is necessary for firefighters to separate themselves from stressful events and details. This form of coping is similar to the alarm phase of the General Adaptation Syndrome. During the alarm phase, the body makes changes to meet the new demands place on the individual (Selye, 1991). In addition, this study provided insight into a third style of coping. Gaining perspective from experience was described by the firefighters as making sense of events and accepting the outcomes of their actions and decisions. The perspective gained includes both a spiritual and religious perspective. The firefighters who described this third type of coping were those who had been on the department longer and also described a heavy reliance on their families away from work to help them cope during stressful times. As an aspect of health related to spirituality, Daaleman et al (2001) also note the importance of Life Scheme and Positive Intentionality including finding meaning in situations and beliefs in one’s abilities. In this
study, evidence of this is found as firefighters describe gaining perspective and increased confidence in their abilities and a struggle to make sense of events.

As indicated in Figure 14.0, the decision of which coping style to employ in specific situations depends on the individual and their reactions to different stressors. The participants described three coping paths taken by firefighters when faced with a stressful event or situation. First, as indicated by arrow 1a, elements of the Persona will act as a filter to the stressor, which will in turn affect the choice of coping style. This path is labeled "persona-facilitated coping." For example, some participants described withholding their emotions when they feel unsettled about events associated with firefighting. The participants described trying to maintain a "tough guy" image they perceive to be associated with firefighting.

The findings from the interviews indicate that the Persona of the firefighter is important to the participants. As indicated by arrow 2, the coping strategies used by firefighters also, in part, define the image of a firefighter. Participants described relying upon co-workers during stressful times. The firefighters also described helping others in times of need, including other firefighters, as a significant contributor to their persona. Many participants also acknowledged their role in the tight community of firefighting. Belonging to this community is, in part, based on overcoming the stressful times as a group, as described by the participants.

Second, as indicated by arrow 1b, the type of stressor can immediately decide the coping style. This path is labeled "stressor-predicated coping." Participants described focusing on specific tasks in order to separate themselves from the patients' emotions when attending to stressful calls. Another example includes participants' descriptions of relying
upon co-workers to discuss their stress when feeling like an afterthought by the City. Participants described a more positive evaluation of their health after having the opportunity to address the stressor, if the strategy to address the stressor is one with which they are comfortable and have chosen for themselves.

Third, as indicated by arrow 1c, coping may be bypassed and the firefighter may experience an immediate effect on overall health. This form of coping is labeled “unintentional avoidance coping” because the focus of the firefighter is on completing the tasks, rather than addressing concerns they have for their well-being; thereby unintentionally avoiding the stressor. For example, participants described the physical strain placed on the firefighter when faced with a constant fluctuation between slow times at the hall and the immediate arousal when dispatched to a call. The firefighter does not have time to address the physical and mental strain placed on his person; rather he is focused on the call and the duties he will perform.

In keeping with human ecological theory (Heft, 2001), insights offered by the participants of the current study suggest a strong transactional process between the individual’s perceptions of health and evaluations of one’s environment. This transactional process is emphasized throughout ecological theory (Ungar, 2002). As indicated by arrows 4 and 5 in Figure 14.0, the perceptions of one’s health simultaneously impact how the firefighter will view himself as well as his abilities to overcome future stresses. In addition, as indicated by arrow 3, coping had an effect on the firefighter’s perception of health. Participants’ perceptions included descriptions of physical, mental, social and spiritual elements of wellness. Physical and mental aspects of health were most often described, with fewer participants acknowledging the elements of social and spiritual health. Specific
...
elements of health described by firefighters were presented in Section 4.5. As Daaleman et al. (2001) describe, subjective well-being is comprised of positive cognitive and affective state. Daaleman et al. (2001) suggests that subjective well-being is the final evaluation of one’s well-being is constant. In the current study, evaluation of one’s health was found to aid firefighters in the preparation for future stressors. Any or all of the elements of health can be affected by the chosen coping style. Figure 15.0 depicts the multiple relationships that exist between coping and health. As the figure suggests, all three coping styles have a considerable impact on one’s health. Specific coping strategies, as they relate to the dimensions of health are further described in Table 7.0.

![Figure 15.0](image-url)  
*Figure 15.0  The relationship between coping and health*
Based on the testimonies of the participants, the three coping styles are linked to aspects of firefighter health, as shown in Figure 15.0. Approach coping and gaining perspective address all four aspects of health: physical, mental, social, and spiritual. Avoidance coping was the only coping style that did not address all four of these elements. Spiritual health was not affected by avoidance coping as participants described using their spirituality to address and gain perspective during times of stress, rather than avoiding stressors. Table 7.0 offers examples of specific coping strategies and how they are linked to the four aspects of health.

When adopting an avoidance coping style, it is common to rely upon alcohol to disassociate from the stressful event. Hagihara et al. (2003) found that social networks often encourage alcohol consumption during stressful periods. The current study provides evidence of this as participants described “going for drinks” with co-workers to unwind from work.

Table 7.0

Coping Strategies Linking Coping Styles to Dimensions of Health

<table>
<thead>
<tr>
<th>Dimensions of Health Coping Style</th>
<th>Physical</th>
<th>Mental</th>
<th>Social</th>
<th>Spiritual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach Coping</td>
<td>Working out</td>
<td>Awareness of stress</td>
<td>Social support; Services provided by Dep’t</td>
<td></td>
</tr>
<tr>
<td>Avoidance Coping</td>
<td>Active when off-duty</td>
<td>Humour; withdrawal &amp; forgetting; active when off-duty</td>
<td>Socializing with other firefighters; active when off-duty</td>
<td></td>
</tr>
<tr>
<td>Gaining Perspective</td>
<td>Making sense of events when being physically active</td>
<td>Helping members of community; perspective from experience</td>
<td>Helping members of the community</td>
<td>Turning to spirituality &amp; religion</td>
</tr>
</tbody>
</table>
Abnormal eye growth can occur with brain tumors causing eye problems and even blindness. Enlarged pupils, especially in children, indicate serious eye problems. Protruding eyes and swelling around the eye socket may also be signs of eye problems. Vision changes, such as blurred vision, sensitivity to light, or double vision, should be evaluated by a medical professional immediately.

<table>
<thead>
<tr>
<th>Table</th>
<th>Data</th>
<th>Analysis</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Gender</td>
<td>Diagnosis</td>
<td>Outcome</td>
</tr>
<tr>
<td>30</td>
<td>Male</td>
<td>Tumor</td>
<td>-</td>
</tr>
<tr>
<td>40</td>
<td>Female</td>
<td>Infection</td>
<td>-</td>
</tr>
<tr>
<td>50</td>
<td>Male</td>
<td>Trauma</td>
<td>-</td>
</tr>
</tbody>
</table>

In conclusion, eye problems can be indicative of serious underlying conditions. Immediate medical attention is necessary to ensure proper treatment is provided.
The effect on health can either contribute to or hinder future coping abilities (arrow 4). Participants explained that gaining experience with the Department is the best way to be prepared for future events and to learn how to cope with future stressors. Preparation for future stressors is depicted in the model through its cyclical nature. The outcome on health also flows back into the persona of the firefighter, as the health status of an individual is important to the overall persona and image of a firefighter (arrow 5). For example, participants explained that a firefighter is best described by their personality and ways of being is directly affected by the firefighters’ physical abilities.

5.2 Stress, Coping, and Health in the Community of Firefighters

As found in this study, the social environment and the nature of the firefighter community play a large role in the stress, coping, and health of the firefighter. Therefore it is imperative that the persona of firefighters be well understood, as it will contribute to the choice of coping style and strategy, which will ultimately affect the firefighter’s health. To suggest a strong understanding of the persona or social identity of firefighters is not to imply the need for intervention; rather, once the social identity is understood, appropriate coping skills can be offered and encouraged to help ensure optimal health for those who protect the community.

The new identities and ways of thinking suggested by Dick (2000) lead to thick social capital within an organization. Organizational social capital is defined by Haslam, Eggins and Reynolds (2003) as “those resources inherent in the network or alliances and relationships within the workforce that contribute to, amongst other things, an organization’s reputation, its members *esprit de corps*, their loyalty and their commitment” (p. 83). Haslam et al. (2003) emphasize the importance of individual identity and its relationship to social
identity, which leads to stronger organizational social capital. Individual identity includes definitions one holds of self, while social identity is the awareness that the individual is part of a social group with other, similar individuals. Turner (2001) suggests that individual and social identity strengthens social capital, as “individuals are able to act as both individuals and group members […] adding immensely to the sophistication and possibilities of our social relationships” (p. x).

Positive health outcomes have long been linked to supportive social networks. This link is also found in the work environment as Monroe et al. (1998) found positive health evaluations and job satisfaction to be linked to social support at work. Similarly, Rabdakkm and Altmaier (1989) found that occupational social support is associated with lower levels of job burnout. Further evidence to support the relationship between social support and positive health evaluations was found in the current study as participants confidently describe both their relationships with co-workers and their health.

5.3 Strengths and Limitation of Research

The strength of this research is that it furthers the literature on stress, coping and health and in doing so addresses a conceptual and methodological gap in the literature. The primary focus of this research was to investigate the perceptions of firefighters regarding their stress, coping abilities, and health. Previous research with firefighters has often incorporated a quantitative methodology. While quantitative methods yield considerable information of general trends and related variables, a qualitative methodology allowed for in-depth and thick descriptions of stress (Strauss, 1987), coping and health in the words of the participating firefighters. The specific form of qualitative research employed was constructivist grounded theory. This approach to research examines the characteristics of a
phenomenon, as defined by the participants (Patton, 2002). This naturalistic approach to inquiry allowed the participants to control the direction of the research, based on their responses and insights. Through the current study, the words of firefighters identified and defined their own stressors, coping strategies, and health outcomes, with little manipulation or control by the researcher. The final result of the inquiry, therefore, attempts to remain true to the testimonies shared during the interview process and provides insight into the thoughts, emotions, and behaviours of firefighters.

The criteria associated with trustworthiness provide a framework for evaluating the strengths and limitations of this study. Table 8.0 summarizes the criteria that contribute to judgments of the trustworthiness and the techniques used in the current study to ensure trustworthiness of the present inquiry. As the table indicates, the strength of the current study is found in the diligence to ensure trustworthy findings.

As described in Section 3.6 (Trustworthiness of Research), Patton (2002) suggests that credibility, transferability, dependability, and confirmability together create judgments of trustworthiness. Credibility is concerned with providing believable analysis; judgments of quality research will ultimately lead to perceptions of credibility (Patton, 2002). Lincoln and Guba (1985) propose a number of techniques to increase judgments of quality, including activities in the field to increase credibility (such as prolonged engagement, persistent observation and triangulation), peer debriefing, negative case analysis, and member checks. Prolonged engagement in the field requires a significant commitment of time to collect data. Data collection with the participating Fire Department spanned a time period of five months, while prior contact with the Deputy Chief was maintained for two months prior to conducting interviews.
Table 8.0

*Summary of Techniques for Establishing Trustworthiness (Adaptation of Table 3.)*

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Suggested Techniques</th>
<th>Techniques used in current study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>1) Activities in the field that increase the probability of high credibility:</td>
<td>1) Prolonged engagement: Contact with department between September 2004 to March 2005.</td>
</tr>
<tr>
<td></td>
<td>a. prolonged engagement</td>
<td>2) Triangulation: multiple sources (12 participants); multiple methods (Interviews and questionnaires)</td>
</tr>
<tr>
<td></td>
<td>b. persistent observation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. triangulation (sources, methods, and investigators)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Peer debriefing</td>
<td>3) Peer debriefing: weekly meetings with advisor, conference presentation</td>
</tr>
<tr>
<td></td>
<td>3) Negative case analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) Referential adequacy</td>
<td>4) Member checks</td>
</tr>
<tr>
<td></td>
<td>5) Member checks</td>
<td></td>
</tr>
<tr>
<td>Transferability</td>
<td>Thick description</td>
<td>Verbatim quotes with thick description</td>
</tr>
<tr>
<td>Dependability</td>
<td>Dependability audit, including audit trail</td>
<td>Systematic process of data collection and analysis (same for all participants)</td>
</tr>
<tr>
<td>Confirmability</td>
<td>Audit trail for analysis, memos, field notes, journal</td>
<td>Maintenance of memo keeping, field notes, and reflexive journal</td>
</tr>
</tbody>
</table>

(Adapted from Lincoln & Guba, 1985, p. 328.)

Triangulation involves capturing multiple, rather than single, perspectives or sources (Lincoln & Guba, 1985; Patton, 2002). Triangulation employs the use of multiple sources, methods, theories or investigators (Lincoln & Guba, 1985). Multiple sources of information were sought in this study. Twelve participants were selected using purposeful sampling techniques, specifically maximum variance sampling. Ensuring a variety of ages, experiences, and ranks provided rich description of themes that intersect the variations (Patton, 2002). Triangulation of multiple methods was also employed, as both a written questionnaire and an interview were used to gather information about participants.

Peer debriefing is described by Lincoln and Guba (1985) as a process of subjecting one’s research to the constructive criticism of one’s peer to illuminate aspects of the inquiry.
that may have escaped the researcher due to the deep immersion required of qualitative research. Throughout the research process, the researcher engaged in weekly meetings with her advisor to become aware of alternative ideas or suggestions to consider in order to strengthen the inquiry. The researcher also underwent a detailed proposal procedure to review the research process with a committee of academics, as well as a presentation at a scholarly conference in April, 2005.

Finally, member checks provide the opportunity for participants to review data, themes, interpretations and conclusions. If the participants are able to identify characteristics and descriptions relevant to themselves within the themes, interpretation, and conclusions, the investigator has successfully captured the essence of the population being studied (Lincoln and Guba, 1985). In the current study, confirmation of interpretations was received by the returned member checks. Specifically, in responding to Question 5 of the member check, Colin comments: "It feels like this question is directed right at me! I think you are getting a sense of, and are really learning, the true psyche of us firefighters."

Transferability asks if findings of a study can be transferred to other setting with similar characteristics (Patton, 2002). Identical transferability, according to Lincoln and Guba (1985), is impossible; however, to enable future researchers to make conclusions about possible transferability to other situations with similar characteristics, thick descriptions is needed throughout the study. As demonstrated in Chapter 4.0, thick descriptions are used in reporting the findings from the study. This includes a description of the participants and the context in which the study was conducted.

Dependability is the evaluation of the systematic process being systematically followed (Patton, 2002). Dependability can be paired with the concept of reliability from the
quantitative vocabulary (Lincoln & Guba, 1985). Confirmability is similar to objectivity, and consists of confirming ideas and meanings with new data and cases. To ensure both the dependability and confirmability of findings, the researcher can undergo an audit trail of analysis, memos, field notes, and journals. The audit trail is an examination of the research and analysis process (Lincoln & Guba, 1985).

Stringent procedures of participant selection, data collection, and data analysis were followed throughout the research process. Participant selection through purposeful sampling techniques has been previously described, while data collection and analysis procedures were consistent for all participants. Each participating firefighter completed the same questionnaire prior to the interview, which was used as reference to direct questions throughout all interviews. All interviews followed the same semi-structured interview guide and were transcribed verbatim and analyzed using NVivo software to assist with open, selective and axial coding. Throughout the entire research process a reflexive journal was kept to capture all researcher thoughts and ideas. The journal provided an opportunity for the researcher to become aware of her preconceptions and biases (Lincoln & Guba, 1985). The completion of the strict procedures for each participant ensures all data were addressed and considered in the same manner.

One technique suggested by Lincoln and Guba (1985) that was not incorporated into the current study is persistent observation. Persistent observation is required to adequately identify characteristics of the environment that are relevant to the research problem or question. Although participants completed interviews and questionnaires, observations at the fire hall would have provided additional depth to the descriptions offered by participants and to the overall findings. A methodological suggestion for future research includes the
incorporation of direct observations. Observations can provide a description of the setting, as well as the activities and people within the setting. Observations would also allow for increased understanding of the context participants described during interviews and would help to deconstruct prior conceptions of the setting held by the researcher. As it is impossible for participants to recall all instances, observations can increase triangulation and provide additional information that escaped participants during interviews (Patton, 2002).

5.4 Recommendations for Future Research

Four main suggestions arose from this study as directions for future research. First, qualitative methods should continue to be employed and observations incorporated in the methods. The depth of information and data gained through the interviews demonstrates the need and relevance of qualitative methods when examining a specific context and phenomena. As suggested in Section 5.3, on-site observations are recommended for future research to increase the richness of data while contributing to the credibility of the findings.

Second, participants of the current study often acknowledged that all fire departments are similar but also have significant differences in their operations and procedures. It is recommended that a similar study be conducted with a different fire department in order to learn about the transferability of these findings. It is unknown if the themes identified by the participating Fire Department are specific to the City, or if other departments also experience similar patterns of stress, coping, and health.

Third, future studies should incorporate an in-depth investigation of the role of families of origin to assist a loved one that is a firefighter. The minimal role played by families of origin described by many firefighters was unexpected and therefore worthy of further investigation. Fourth, despite the original sampling strategy to include female
firefighters, none were available within the Fire Department at the time of research. It is suggested that a similar inquiry by conducted with female firefighters to learn more about their beliefs regarding stress, coping, and health and the ways in which they are similar and/or different than their male counterparts.

5.5 Conclusion

As the firefighter arrives at his station, he is unaware of what the day will hold for him. After he has relieved a co-worker from the previous shift, he checks his equipment and his truck. The coffee is on and he grabs a cup while members of his crew recap their hockey game from the previous night. Hall duties wait for him and he starts unrolling and cleaning hoses. The shift can continue on at this pace; divided between duties, training, and joking with his friends on his crew. Or, his truck may be called to a fire or gruesome accident where the firefighter will be faced intense emotions due to the loss of property, or worse, the loss of life. What a shift has in store for firefighters is unknown, and because of this, those in this occupation are forced to adapt to each moment as it comes. Understanding the stress and coping of firefighters requires knowledge of the range of stressors, the complex and cyclical nature of the relationship between stress, coping, and health in addition to the central role played by the firefighting identity and the nature of the social context.

The stressors identified throughout the study come from a variety of environments, including work, home, and the community. The participants also identified complex strategies to cope with their work-related stress that vary by individual and situation. Participants described reliance upon the mind, body, and soul to help overcome stressful periods. As a result of the variety of strategies, the participants portray their health beyond the physical and include aspects of the emotional, social, and spiritual realms. The
relationship to health is dependant upon the individual, as participants acknowledge the different aspects of health and call upon these aspects as resources in times of need.

The use of firefighters as participants in this study provided a unique view of stress and coping, while also offering a distinct environment to examine stress. Findings from the study may also provide insights into the stress-coping-health relationship that may be applicable to the general population. This study highlights the importance of health-awareness in the general population to fully grasp the impact of stress and coping. The findings suggest the importance of identity and social support from the community for coping with stressors. The model presented in Chapter 5.0 suggests that the stress-coping-health process does not end with the final evaluation of one’s health; rather it emphasizes the important role health plays to prepare for future stress. As a result of this research, the understanding of stress, coping, and health has been broadened to emphasize the cyclical relationship between these three concepts.

The identity of the firefighter and belongingness to a group is also an important aspect of successful coping and positive evaluation of overall health. Understanding individual identity and how the individual fits into the group context provides additional coping resources. Peers and colleagues act as a mirror to coping attempts as well as a resource during stressful periods. Being aware of how one fits into a social context helps the individual the gauge their coping abilities and provides suggestions for coping alternatives.

Firefighters have a unique identity as they differentiate themselves based on their acceptance into the family of firefighting; yet they also indicate that they are like everyone else. As one participant stated: "We are people just like you who have families, friends, who laugh and cry. Although sometimes we might appear tough, thick-skinned and
insensitive, we are very approachable and caring underneath it all.” Due to this unique dual identity, the findings of this study and aspects of the resulting model apply to both firefighters and the general population.
References


null


Appendix A: Ethics Approval

DATE: Thursday, August 19, 2004

FROM: Linda Rose-Krasnor, Chair
      Research Ethics Board (REB)

TO: Susan Arai, Community Health Science
     Sara HUNTER

FILE: 04-004 - HUNTER

TITLE: A Constructivist Grounded Theory of Firefighter Perception of Stress & Coping and the Impact on Wellness

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as clarified

This project has been approved for the period of Thursday, August 12, 2004 to August 31, 2005 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The approval may be extended upon request. The study may now proceed.

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and approved by the REB. The Board must approve any modifications before they can be implemented. If you wish to modify your research project, please refer to www.BrockU.CA/researchservices/forms.html to complete the appropriate form REB-03 (2001) Request for Clearance of a Revision or Modification to an Ongoing Application.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and approvals of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects, with the exception of undergraduate projects, upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form REB-02 (2001) Continuing Review/Final Report is required.
Please quote your REB file number on all future correspondence.

Heather Becker, Office of Research Ethics
Brock University
Office of Research Services
500 Glenridge Avenue
St. Catharines, Ontario, Canada L2S 3A1
phone: (905)688-5550, ext. 3035   fax: (905)688-0748
email: hbecker@brocku.ca
http://www.brocku.ca/researchservices/humanethics.html
Appendix B: Recruitment Poster and Letter

Brock University
Faculty of Applied Health Sciences

FIREFIGHTERS SOUGHT TO PARTICIPATE IN RESEARCH STUDY

Purpose: To develop an understanding of how firefighters perceive and cope with stressful experiences and the impact of this process on wellness. The stress experienced by firefighters is being examined because of the unique characteristics of the occupation that expose firefighters to varied situations.

Who is conducting the study? The research is being conducted as part of the thesis study of Sara Hunter, a Master's candidate in the Faculty of Applied Health Sciences at Brock University.

What is involved? You will be asked to complete a very brief questionnaire (approximate time 5 minutes), and participate in an interview that will last between 1 and 1.5 hours. The questionnaire will ask you to rate your level of work-related stress and your approach to coping with these stresses. The interview will involve questions relating to stress at work, strategies to cope with occupational stress, and your perceptions of health and wellness. Some of the questions that you might be asked include: What makes your job stressful? What helps you cope with work related stress? When you think about the beginning of your career, what has changed the most?

If you are interested in participating in the study, or if you would like more information, please take one of the flyers and contact Sara Hunter by October 1, 2004:

Sara Hunter  
Phone: 905-684-9614  
Email:

The Brock University Research Ethics Board (REB) can also provide answers to questions concerning the ethical nature of the study and the rights of the participants (refer to file #04-004). The REB can be reached at reb@brocku.ca or by phone at 905-688-5550 x3035

Please Take a Flyer
October, 2004

Dear Firefighter

This letter is to invite you to participate in a study about the stress experienced by firefighters. The research project is entitled, "A Constructivist Grounded Theory of Firefighter Perceptions of Stress and Coping and the Impact on Wellness." The stress experienced by firefighters is being examined because of the unique characteristics of the occupation that expose firefighters to varied situations. I am a graduate student in the Faculty of Applied Health Science at Brock University and working toward my Master's thesis under the supervision of Dr. Susan Arai in the Department of Community Health Sciences. The nature of this study has been endorsed by the Fire Chief for the {City} and has been deemed a worthwhile study.

Your involvement and feedback are important! You will be asked to complete a very brief questionnaire (approximate time 5 minutes), and to participate in an interview that will last between 1 and 1.5 hours. The questionnaire will ask you to rate your level of work-related stress and your approach to coping with these stresses. The interview will focus on the stress experienced at work, strategies to cope with occupational stress, and your perceptions of health and wellness. Some of the questions that you may be asked include: What makes your job stressful? What helps you cope with work related stress? When you think about yourself at the beginning of your career, what has changed the most? These interviews will be conducted at the fire hall, or an alternative location, at a time that is convenient to you.

For more information, or to volunteer for this study, please contact Sara Hunter at 905-684-9614 or by email at huntersara@hotmail.com. Questions about the study may also be directed to Dr. Susan Arai (tel: 905-688-5550 extension 4783, e-mail: sarai@brocku.ca) and the Brock University Research Ethics Board (REB) can also answer pertinent questions about the ethical nature of the study and the rights of the participants. The REB can be reached at reb@brocku.ca or by phone at 905-688-5550 x3035.

This study has been reviewed by, and received ethics clearance through the Brock University Research Ethics Board (file #04-004).

Sincerely

Sara Hunter
MA Candidate, Applied Health Sciences

Susan Arai, Ph.D.
Assistant Professor,
Department of Community Health Sciences
Appendix C: Letter of Introduction
(Printed on Brock Letterhead)

October, 2004

Dear Firefighter:

Thank you for agreeing to participate in this study about firefighter wellness, stress and coping. The research project is entitled, “A Constructivist Grounded Theory of Firefighter Perceptions of Stress and Coping and the Impact on Wellness.” Sara Hunter, a graduate student at Brock University in the Department of Applied Health Science, is conducting the research as part of her M.A. thesis under the supervision of Dr. Susan Arai in the Department of Community Health Sciences.

The purpose of this research is to develop an understanding of how firefighters perceive and cope with stress and the impact of this process on wellness. As part of this study, you are being asked to participate in an interview about your experiences on the job. Firefighters are being examined because of the unique characteristics of the occupation that expose firefighters to varied situations. Prior to the interview, you will be asked to complete the brief questionnaire that is included in the package. This questionnaire will take approximately 5 minutes to complete and will help us to use our interview time as effectively as possible. The interview is expected to last approximately 1 to 1.5 hours. Questions will focus on your perceptions about topics such as: work-related stress, strategies for coping with occupational stress, and perceptions of health and wellness. For example, some of the questions that may be asked during the interview include: Can you describe what happens during a typical shift? What makes your job stressful? What helps you cope with work-related stress? When you think about you when you began your career, what has changed the most?

Results from this study will help to develop a better understanding of the relationship between stress, coping, and wellness specific to firefighters’. Findings and themes that emerge from interviews will appear in a final report, and may be included in a journal article or lecture to undergraduate students. Any information that arises from participants will be treated with confidentiality and access to information that might identify participants will be limited to Sara Hunter and her faculty advisor, Dr. Susan Arai in the Department of Community Health Sciences at Brock University. The names of specific participants in the research will not be included in oral or written reports arising from this study. The interviews will be recorded for research purposes. All original audiotapes will be destroyed following completion of the research. Little to no harm is anticipated from the participation of this study. Your participation in this research is voluntary and you may decline answering any question(s) within the questionnaire or interview guide that you find invasive, offensive or inappropriate. You may withdraw from the study at any stage in the process. Of course, you may choose not to participate and will not experience negative consequences.
Following the completion of the study we would be happy to send you an executive summary of the results. Should you have any further questions concerning the interview or the study in general, please feel free to contact Sara Hunter (tel: 905-684-9614, e-mail: huntersara@hotmail.com) or her advisor, Dr. Susan Arai (tel: 905-688-5550 extension 4783, e-mail: sarai@brocku.ca). Additionally, concerns about your involvement in the study may also be directed to Research Ethics Officer in the Office of Research Services at 905-688-5550, extension 3035. This study has been reviewed by, and received ethics clearance through the Brock University Research Ethics Board (file #04-004).

Thank you for your interest and involvement in this study.

Sincerely

Sara Hunter
MA Candidate,
Faculty of Applied Health Sciences

Susan Arai, Ph.D.
Assistant Professor,
Department of Community Health Sciences

Note: Page 198 onward should be consecutive.
Appendix D: Informed Consent Form

Informed Consent Form - Participants


Principal Researcher: Sara Hunter, M.A. Candidate, Faculty of Applied Health Sciences, Brock University

Faculty Supervisor: Dr. Susan Arai, Department of Community Health Sciences, Brock University

Interviewer: Sara Hunter

Name of participant: (please print)

- I have been given and have read the Letter of Introduction provided to me by the interviewer conducting the research.
- I understand that this research in which I have agreed to participate will involve the completion of a questionnaire and my participation in an interview that will last for approximately one hour to an hour and a half. The purpose of this investigation is to explore my perceptions of stress, my coping strategies during stressful times, and to understand the impact of stress and coping on wellness.
- I understand that my participation will bring little to no risks or harms, and these risks have been explained to me.
- I understand that my participation in this study is voluntary and that I may withdraw from the study at any time and for any reason without penalty.
- I understand that should the interview be interrupted (i.e., to respond to a call), the researcher will contact me within 2 days of the original interview time to re-schedule.
- I understand that I may ask questions of the researchers at any point during the research process.
- I understand that there is no obligation to answer any question that I feel is invasive, offensive or inappropriate.
- I understand that there will be no payment for my participation.
- I understand that all personal information will be kept strictly confidential and that all information will be coded so that the name of our department, fire hall and my name are not associated with my answers.
- I understand that I will be contacted following the interview and asked to review my transcript. At this time I will have the opportunity to provide more information and clarification.
- I understand that only the Principal Investigator and the faculty advisor will have access to the data.
- I understand that the results of this study will be used as part of a final thesis project. Information may also be used during presentations or written projects generated from this study, although my name, fire hall and fire department will not be revealed.
- As indicated by my signature below, I acknowledge that I am participating freely and willingly and I am providing my consent.

Participant's signature: ________________________________ Date ________________________________
This study has been reviewed and received ethics approval through the REB file # 04-004.

If you have any questions or concerns about your participation in the study, you may contact Sara Hunter at 905-227-5449 or at huntersara@hotmail.com or Dr. Susan Arai (tel: 905-688-5550 extension 4783, e-mail: sarai@brocku.ca).

Concerns about your involvement in the study may also be directed to Research Ethics Officer in the Office of Research Services at 905-688-5550, extension 3035 (file #04-004).

I have fully explained the procedures of this study to the persons named above.

Researchers Signature: ___________________________ Date: _______________________

Thank you for your help! Please take one copy of this form with you for further reference.
Appendix E: Interview Guide

Turn on audio tape; explain that the purpose of the audio tape is to accurately capture the words and opinions of the participant.

Review and sign the information/consent form. Ensure questionnaire has been completed.

"Thank you for taking the time to participate in this interview. This interview is part of my Master’s thesis, which is examining stress and coping in a high-stress occupation. I am not looking for a 'right' answer to any of these questions, only the experiences and thoughts you would like to share. Any and all insights you provide during this interview will be of great assistance to my final project. Questions will be grouped into two main categories: 1) stress and coping and 2) wellness. If there are any questions you do not want to answer, or if you wish to stop the interview at any time, please feel free to do so.

Do you have any questions before we begin?"

1. Introduction Questions

1a. How/why did you become interested in firefighting?
1b. What drew you to this occupation?

2. Stress/Coping Questions

"The following questions relate to the stresses you encounter in your job and your strategies for coping with these situations. Feel free to ask for clarification of these questions if I am not being clear."

2a. Can you describe what happens during a typical shift?
   • What is your routine?
   • How do you fill the time when there are no calls?

2b. Can you describe a work-related time or event (positive and/or negative) that stands out in your mind as being memorable?
   • What is it about this event that makes it memorable?
   • What are your thoughts during and/or after this event?

Statement/light questions to give participant a “break” from potentially intense answers

2c. What makes your job stressful?
   • How has your perception of stress changed since you began this job?

Refer to questionnaire.

2d. I see you ranked daily hassles as [...] Can you tell me about this ranking?
• How does this type of stress affect you on at work?

2e. I see you ranked chronic stress as [. . .]. Can you tell me about this ranking?
• How do these situations affect you on a personal level?

2f. I see you ranked sudden trauma [. . .]. Can you tell me what you were thinking about when you created this ranking?
• In your job you come across situations that the general population would consider traumatic, such as loosing a home, accidents, injuries, death. When you encounter these types of calls, do you consider them stressful?
  • Why/why not?
  • If these incidents are not considered stressful to you, can you explain why not?
    o What do you say to yourself to cope with these situations?

2g. I see you ranked life change events as [. . .]. Can you tell me about this ranking?
• What do you think is a life change event associated with firefighting?
• How does this type of event affect you on a personal level

2h. I see you ranked non-events as [. . .]. Can you tell me about this ranking?
• What would you consider to be a non-event in this profession?
• How much do non-events affect you at work?

Statement/light question to give participant a “break” from potentially intense answers and to make the shift from stress to coping

2i. What helps you cope with your work-related stress?
• What are the different ways that you cope with different types of stress?

2j. How have events outside of work affected your time on the job?
• Do you bring non-work stress on to the job with you?
• What techniques do you use to prevent non-work stress from affecting your time at work?

2k. How does your family help you cope with the stress of your job?

2l. How do others in the community help you to cope with the stress of your job?

2m. What role do the other firefighters play in providing support during stressful times on the job?

2n. What supports are provided by the department to help cope with stress (training? Services?) (added Jan. 27)

3. Health Questions
"As part of this study I am looking at coping and stress and the impact on perceived wellness. The direction of questions is now going to shift away from stress and coping, and move toward your perception of wellness."

3a. On the questionnaire you rated your overall level of health as [...]. Can you tell me more about this?

3b. How do you define health (added Dec. 14)

3c. How do your coping strategies affect your overall health? (Added Nov. 25)

3d. When you think about when you began your career, what has changed the most?

3e. Have your perceptions of health changed since you began your career?

3f. In your opinion, how are the 3 process linked (stress, coping & health) (added Dec. 14)

3g. How has your way of thinking about events on the job changed?

3h. How have your beliefs or priorities changed since becoming a firefighter

3fi Thinking back to when you became a firefighter, has there been changes in the people that you interact with?

3j. In what ways has the way you interact with other people changed?

Concluding Questions

• What does being a firefighter mean to you?
• Is there anything you would change about your job if you could?

"That's all the questions I have for you."

• Is there anything you would like to add to the things you have already commented on??
• Is there anything you would like to ask me?

Debriefing

Statement to be made by researcher:
Your participation in this interview has been very helpful. This interview is part of research project investigating stress and wellness in high-stress occupations. Stress is very natural and a part of our daily lives, but your insights and responses are very much appreciated as they shed light and offer insights into the unique experiences and stresses of firefighters. The responses you offered during the interview will used towards the completion of my MA thesis. As I mentioned at the start of the interview, your anonymity
and confidentiality can be assured, as you will not be personally identified at any time throughout the analysis of this data and during the report.

I am confident that you have access to supports when needed, however if any topic or line of questioning has upset you during this interview, please feel free to discuss them with me. You may also contact my advisor, Dr. Susan Arai of the Community Health Department at Brock University, or the Research Ethics Officer in the Office of Research Services at Brock University. Phone numbers and email addresses for myself, Dr. Arai and the Ethics Board are included in this letter of appreciation. [hand letter of appreciation] In addition, I have included additional contacts and supports should you need them.

The entire study will be completed in the spring of 2005. Would you like me to send you a copy of the executive summary. What is the best way to send something to you by mail (please provide address)?

Thank you once again for your participation. I may be in contact at a later date to verify and to ensure I am accurately interpreting your responses.
Appendix F: Questionnaire
Thank you for taking the time to participate in my study titled "A Constructivist Grounded Theory of Firefighter Perception of Stress and Coping and the Impact on Wellness." This questionnaire will provide background information so that we may use the interview time as effectively as possible.

Background information

1. How long have you been a firefighter in [City]?
   ___Years and ___Months

2. Did you ever work as a firefighter anywhere else? (please check one)
   □ Yes  □ No

   If yes, how long did you work for the other department(s)?
   ___Years and ___Months

3. Please indicate your current position/rank in the [City] fire department.

4. Age
   ___Years

5. Gender (please check one):
   □ Male  □ Female

The following questions ask you to rate your level of health, stress, and coping. When answering these questions, please consider work-related experiences within the past 12 months. Please indicate your response by placing an "X" on the scale. For example,

Overall, I would rank my level of health as

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very High</td>
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</table>

1. Thinking about the last 12 months, I would rank my overall level of health as...

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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very High</td>
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</tbody>
</table>
2. Thinking about the last 12 months, I would rate my level of work-related stress as...

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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very high</td>
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3. Thinking about the last 12 months, I would rate my ability to cope with work-related stress as...

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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very High</td>
</tr>
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</table>

Daily hassles are the demands that characterize typical days. For example, traffic on the way to work, making meals, etc.

4. Thinking about work-related events in the last 12 months, I would rate my level of stress with daily hassles as...

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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very high</td>
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</table>

5. Thinking about the last 12 months, I would rate my ability to cope with daily hassles as...

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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very High</td>
</tr>
</tbody>
</table>

Non-events are events that are desired or anticipated, but do not occur. For example, not receiving an expected promotion, waiting for news that does not come, etc.

6. Thinking about work-related events in the last 12 months, I would rate my level of stress with non-events as...

<table>
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<tr>
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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very high</td>
</tr>
</tbody>
</table>

7. Thinking about the last 12 months, I would rate my ability to cope with non-events as...

<table>
<thead>
<tr>
<th>1</th>
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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very High</td>
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</tbody>
</table>

Chronic stress develops slowly and lasts over a prolonged period of time, but is usually less limiting than other forms of stress. For example, ongoing conflicts with other co-workers, an irritating injury, etc.

8. Thinking about work-related events in the last 12 months, I would rate my level of stress with chronic stress as...

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<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Very high</td>
</tr>
</tbody>
</table>
9. Thinking about the last 12 months, I would rate my ability to \textit{cope with} \textit{chronic stress} as...

\begin{tabular}{ccccc}
1 & 2 & 3 & 4 & 5 \\
Very low & Low & Moderate & High & Very High
\end{tabular}

\textit{Life change events} are events that create \textit{significant life changes} and \textit{have specific start and end points}. For example, being hired, being laid off, etc.

10. Thinking about work-related events in the last 12 months, I would rate my level of stress \textit{with life-change events} as ...

\begin{tabular}{ccccc}
1 & 2 & 3 & 4 & 5 \\
Very low & Low & Moderate & High & Very High
\end{tabular}

11. Thinking about the last 12 months, I would rate my ability to \textit{cope with life-change events} as...

\begin{tabular}{ccccc}
1 & 2 & 3 & 4 & 5 \\
Very low & Low & Moderate & High & Very High
\end{tabular}

12. Thinking about work-related events in the last 12 months, I would rate my level of stress with \textit{traumatic events} as ...

\begin{tabular}{ccccc}
1 & 2 & 3 & 4 & 5 \\
Very low & Low & Moderate & High & Very High
\end{tabular}

13. Thinking about the last 12 months, I would rate my ability to \textit{cope with traumatic events} as...

\begin{tabular}{ccccc}
1 & 2 & 3 & 4 & 5 \\
Very low & Low & Moderate & High & Very High
\end{tabular}

14. What are some of your thoughts or perceptions about the stress that you experience on the job?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

\textit{Thank you for taking the time to complete this questionnaire. Your answers will help to guide the interview and use the time as effectively as possible. Please bring this completed questionnaire with you to the interview.}
Appendix G: Interview Table

Research Questions
1. What is perceived as a stressful experience for firefighters?
2. How do firefighters perceive stressors associated with occupational stress?
3. What are the coping mechanisms for firefighters?
4. What is the relationship between the stress-coping process and wellness?

Types of Question
- Experience/behavioural (experience): Ask about experiences faced by the respondent and their actions in specific situations
- Opinion/value (opinion): Aim to understand the thought process of the participant, including his/her intentions, desires, expectations, and goals
- Feeling: Examine the affective dimensions of life. These questions will yield descriptive and emotion-based responses (Patton, 2002).

<table>
<thead>
<tr>
<th>Question</th>
<th>Research Question</th>
<th>Type of Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a. How/why did you become interested in firefighting?</td>
<td>n/a</td>
<td>Opinion</td>
</tr>
<tr>
<td>1b. What drew you to this occupation?</td>
<td>n/a</td>
<td>Experience/opinion</td>
</tr>
<tr>
<td>2. Stress/Coping Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Can you describe what happens during a typical shift?</td>
<td>1</td>
<td>Experience</td>
</tr>
<tr>
<td>• What is your routine?</td>
<td>1</td>
<td>Experience</td>
</tr>
<tr>
<td>• How do you fill the time when there are no calls?</td>
<td>1</td>
<td>Experience</td>
</tr>
<tr>
<td>2b. Can you describe a work-related time or event that stands out in your mind as being memorable?</td>
<td>2</td>
<td>Experience</td>
</tr>
<tr>
<td>• What is it about this event that makes it memorable?</td>
<td>2</td>
<td>Experience/opinion</td>
</tr>
<tr>
<td>• What are your thoughts during and/or after this event?</td>
<td>2</td>
<td>Opinion</td>
</tr>
<tr>
<td>2c. What makes your job stressful?</td>
<td>1</td>
<td>Experience/opinion</td>
</tr>
<tr>
<td>• How has your perception of stress changed since you began this job?</td>
<td>1</td>
<td>Opinion</td>
</tr>
<tr>
<td>2d I see you ranked daily hassles as [. . .]. Can you</td>
<td>2</td>
<td>Experience/opinion</td>
</tr>
</tbody>
</table>
tell me about this ranking?
• How does this type of stress affect you on at work?

2e I see you ranked non-events as [...]. Can you tell me about this ranking?
• What would you consider to be a non-event in this profession?
• How much do non-events affect you at work?

2f I see you ranked life change events as [...]. Can you tell me about this ranking?
• What do you think is a life change event associated with firefighting?
• How does this type of event affect you on a personal level

2g I see you ranked chronic stress as [...]. Can you tell me about this ranking?
• How do these situations affect you on a personal level?

2h I see you ranked sudden trauma [...]. Can you tell me what you were thinking about when you created this ranking?
• In your job you come across situations that the general population would consider traumatic, such as losing a home, accidents, injuries, death. When you encounter these types of calls, do you consider them stressful?
  • Why/why not?
  • If these incidents are not considered stressful to you, can you explain why not?
    o What do you say to yourself to cope with these situations?

2i What helps you cope with your work-related stress?
• What are the different ways that you cope with different types of stress

2j How have events outside of work affected your time on the job?
• Do you bring non-work stress on to the job with you?
• What techniques do you use to prevent...
non-work stresses from affecting your time at work

2k. How does your family help you cope with the stress of your job?  3   Opinion

2l. How do others in the community help you to cope with the stress of your job?  3   Opinion

2m. What role do the other firefighters play in providing support during stressful times on the job?  3   Opinion

3. Health Questions

3a. On the questionnaire you rated your overall level of health as [...] Can you tell me more about this?  4   Opinion

3b. When you think about when you began your career, what has changed the most?  4   Opinion

3c. How have you physically changed since becoming a firefighter? (ie. Injuries, strength...)
   • Are all changes due to the job?  n/a   Opinion

3d. How has your way of thinking about events on the job changed?  1/2   Opinion

3e. How have your beliefs or priorities changed since becoming a firefighter?  4   Opinion/feeling

3f. Thinking about when you became a firefighter, has there been any changes in the people that you interact with?  4   Opinion

3g. In what way has the way you interact with people changed?  4   Opinion/experience

4. Concluding Questions

• Is there anything you would change about your job if you could?  n/a   Opinion/feeling

*Is there anything you would like to add to the things you have already commented on?*

*Is there anything you would like to ask me?*
Appendix H: Member Check Letter
(Printed on Brock Letterhead)

March 21, 2005

Dear

Thank you again for your participation in my research study (A Constructivist Grounded Theory of Firefighter Perceptions of Stress and Coping and the Impact on Health). The insights from the participants have been rich and insightful.

To ensure that I have accurately captured your thoughts and opinions, I have enclosed a copy of the transcript from your interview for you to review. Upon reading your transcripts, you may clarify any of your responses or expand on the discussion that arose during the interview. In addition, from my initial analysis of the interviews there are a number of themes that have emerged. Please respond to the questions attached to this letter. All information that you provide will be treated with the same confidentiality as your interview. There is no penalty if you choose to not respond to these questions, however I would appreciate your feedback on these themes to ensure that they represent your views.

If you have any questions or would like to make any clarifications, you can contact me by phone at 905-684-9614 or email at huntersara@hotmail.com. Questions about the study may also be directed to Dr. Susan Arai (tel: 905-688-5550 extension 4783, e-mail: sarai@brocku.ca) and the Brock University Research Ethics Board (REB) can also answer pertinent questions about the ethical nature of the study and the rights of the participants. The REB can be reached at reb@brocku.ca or by phone at 905-688-5550 x3035.

Thank you once again for your participation in the study. Your time and your insights are appreciated!

Sincerely

Sara Hunter
MA Candidate, Applied Health Sciences

Susan Arai, Ph.D.
Assistant Professor,
Department of Community Health Sciences

Note: This study has been reviewed by, and received ethics clearance through the Brock University Research Ethics Board (file #04-004).
Appendix I: Member Check

Thank you for taking the time to respond to these follow-up questions. Please respond to the questions below (you can use the back of the paper if you need extra space) and return your response in the enclosed envelope to:

<table>
<thead>
<tr>
<th>Sara Hunter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Student,</td>
</tr>
<tr>
<td>Department of Community Health Sciences</td>
</tr>
<tr>
<td>Brock University</td>
</tr>
<tr>
<td>St Catharines, ON L2S 3A1</td>
</tr>
</tbody>
</table>

**Question 1:** Is there anything in your transcript that you would like to add, clarify, or elaborate on?

**Question 2:** Many of the stressors identified by participants revolve around a tension of some kind. Tensions included elements of specific calls, personalities of other firefighters, the lack of understanding by the family, or a perceived lack of support from the [City]. Does this pattern accurately depict you?

**Question 3:** Some, participants in the study noted that stressors lead to periodic times of feeling helpless, a difficulty focusing on the job (due to physical and emotional ups and downs), and being critical of self. Have you had similar experiences?
Question 4: An interesting theme emerged from the interviews that describes the role one's self-concept as a firefighter plays in coping. For you, *what role does your identity as a firefighter play in coping with stress?*

Question 5: Participants identified a number of coping strategies for managing work-related stress. These include:

- **Approach coping strategies** are tactics that directly address the stressor. These include talking to others about the stress; using services provided by the [City] such as counselors, critical incident stress debriefing (CISD) etceteras.
- **Avoidance coping strategies** that divert attention away from the stressor (using humour, working out).
- **Gaining a broader perspective** to make sense of stressful situations. ("I did the best I could, therefore I am ok with the outcome"; "I do not feel stressed because the situation and outcome are determined by a higher power.")

*Do your coping strategies fall into one or more of these categories? If not, how would you describe your coping strategies?*

---

*Thank you for your participation! A summary of the findings will be mailed to you in early August 2005.*