

THE INFLUENCE OF BURNOUT SYMPTOMS ON THE RELATIONSHIP BETWEEN WORK-LIFE
BALANCE AND SELF-RATED HEALTH

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ABSTRACT

The effects of stress at work are estimated to cost Canadian employers more than 20 billion dollars annually through absenteeism, sick leave and decreased productivity. Over the past two decades, Canadians have reported higher stress levels, increased work hours and more work performed outside of normal business hours. This work-life imbalance has far-reaching repercussions—affecting an employee’s performance as well as their health. Chronic exposure to these high levels of stress can also lead to burnout. The primary purpose of this study was to determine the magnitude in which burnout symptoms influence the relationship between work-life balance and self-rated health. The secondary purpose of this study was to determine if gender and age interactions exist in the relationship between burnout, work-life balance, and self-rated health. This cross-sectional study involved secondary analysis of 220 managers, workers and human service professionals who completed an Occupational Health Clinics for Ontario Workers’ Mental Injury Toolkit (MIT) survey for the launch of the MIT. The MIT survey is a modified form of the short version of the Copenhagen Psychosocial Questionnaire and includes expanded questioning around burnout, stress, sleep troubles, cognitive, and somatic symptoms. There were no significant differences in self-rated health based on a respondent’s gender or age, indicating that no interaction of gender and age would be required. Respondents with low self-rated health reported significantly higher burnout and work-life imbalance compared to those with high self-rated health. The regression analysis demonstrated that the magnitude in which burnout mediates the relationship between work-life balance and self-rated health was 96%. These findings support previous studies that associate high levels of work-life imbalance or burnout with poor self-rated health or health outcomes. In this study, the shared variance between work-life balance and burnout also supports recent efforts to redefine the context and causes of burnout to include non-work factors. Based on our findings, the potential exists for the development of workplace health promotion strategies that address maintaining a balance between work and home as they may improve employee health and reduce burnout.

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LIST OF ABBREVIATIONS

α	Alpha
ANOVA	Analysis of variance
COPSOQ	Copenhagen Psychosocial Questionnaire
CBI	Copenhagen Burnout Inventory
MIT	Mental Injury Toolkit
OHCOW	Occupational Health Clinics for Ontario Workers
MBI	Maslach Burnout Index

CHAPTER 1 – INTRODUCTION

1.1 Preamble

Economic, political, and sociocultural forces have led to a shift from work done primarily in the manufacturing sector to service-based vocations (Cooper, Dewe, & O’Driscoll, 2001; Peeters, Montgomery, Bakker, & Schaufeli, 2005). This transition has been accompanied by changes in employee exposure to various types of stress. Manufacturing jobs are typically associated with physical stress and injuries, whereas service-based occupations are characteristically correlated with mental and emotional stress (Peeters et al., 2005).

In Canada, one quarter of the workforce described their lives as ‘highly stressful’ (Crompton, 2011). In the workplace, employee exposure to excessive stress contributes to absenteeism, decreased productivity, and an increase in sick time (Leka & Jain, 2010). It is estimated that three-quarters of short term disability claims in Canada are related to stress in the workplace (Crompton, 2011). Furthermore, mental health problems are estimated to cost Canadian employers more than \$20 billion dollars each year (Crompton, 2011). In the past two decades, the percentage of employees reporting high stress levels has increased by 13% and the prevalence of depression has increased by 12% (Duxbury & Higgins, 2012). Research suggests that exposure to work-related stress is linked to unhealthy behaviours (e.g. smoking, alcohol consumption, poor sleep habits) and mental or physical conditions (e.g. migraine, cardiovascular disease, rheumatoid

arthritis, cancer, depression) (Cox, Griffiths, & Rial-González, 2000; Leka & Cox, 2010). Additionally, approximately 40% of employees identify stresses occurring outside of the workplace as having an impact on their work performance (Crompton, 2011). It seems logical that addressing workplace stress and work-life balance will contribute to not only improved health for Canadian workers, but may also decrease some of the burden on our health system and potentially improve our economy.

Women are at particular risk for workplace stress and the associated negative mental and physical outcomes. The types of jobs that women typically perform are strongly associated with health risks (Karasek, 1998). On average women are also paid less than men and a positive association between health and socio-economic status has been established in the literature (Karasek, 1998; Mikkonen & Raphael, 2010).

The traditional role of women as the family caregiver has also contributed to a work-life imbalance. One third of Canadian employees are part of the 'sandwich' generation (those who have caregiving responsibilities to both children at home and elders) with women performing almost double the number of unpaid caregiving hours per month when compared to men (National Union of Public and General Employees, 2013). This segment of the population reported higher levels of stress, depression, and poor physical health (National Union of Public and General Employees, 2013).

Technological innovations affect how work is performed. There has been a dramatic increase in 'telework' since the 1990s, which has been observed to have negative impacts on employees' family relationships (Hill, Miller, Weiner, & Colihan,

1998). Additionally, average reported hours of labour per week increased by approximately 12 hours between 1991 and 2011 (Duxbury & Higgins, 2001, 2012). Email and other forms of communication and information technology have contributed to increases in work performed at home outside of normal business hours (Duxbury & Higgins, 2012). This technology has also increased reported stress levels in employees (Duxbury & Higgins, 2012).

The World Health Organization defines health as “a resource for everyday life, not the objective of living; it is a positive concept emphasising social and personal resources, as well as physical capacities” (1984). Self-rated overall health, often presented using a Likert scale, is considered to be a reliable measure of mortality and morbidity and is used by researchers as a measure of physical and mental wellbeing (Krause & Jay, 1994). Employment status and occupation type have implications for mental and physical health (Marmot & Wilkinson, 2006). As predominant occupations have changed over time, a corresponding shift has occurred in the research of work hazards (Leka & Jain, 2010). In the past, researchers concentrated on threats to employee health such as chemical exposure and workplace accidents (Leka & Jain, 2010), while a recent investigation focused on the impact of work stressors (Leka & Jain, 2010). Work stressors are also known as psychosocial hazards or psychosocial risks. These hazards include factors such as job content, workload, work pace, work schedule, control, environment and equipment, organizational culture and function, interpersonal

relationships at work, role in organization, career development, and work-home interface (Leka & Cox, 2010).

Research into work-life balance or work-home interface often focuses on the struggles that occur when obligations associated with various roles (e.g., parent, child, employee, and student) come into conflict. This is known as interrole incompatibility (Greenhaus & Beutell, 1985). Researchers also distinguish between conflict that occurs when work events affect home (work-home interface) and when home events affect work (home-work interface) (Peeters et al., 2005). By noting the directionality of the conflict, researchers can examine the factors on each side of the spectrum that may contribute to the imbalance.

As aforementioned, technology such as laptops, smart phones, and email have allowed employees to more easily experience a work-life imbalance (Peeters et al., 2005). The increased participation of women in the workplace may also contribute to work-home conflict. This is especially the case for primary caregivers who may experience strain between their personal and work related duties (Peeters et al., 2005). Further problems associated with work-life imbalance include poor psychological health (Winter, Roos, Rahkonen, Martikainen, & Lahelma, 2006) and low self-rated health (Higgins, Duxbury, & Johnson, 2004). Work-life conflict is also associated with increased absenteeism, increased use of work benefits, decreased productivity, and a need to reduce work hours (Duxbury & Higgins, 2012).

Research has indicated that the demands that contribute to a work-life imbalance may be precursors to burnout (Peeters et al., 2005). Burnout occurs in all occupations (Bährer-Kohler, 2013). There is no clinical definition for burnout; however, what is common to burnout situations is constant and intense physical and emotional demands (Bährer-Kohler, 2013). Burnout is chronic in nature; the conditions that contribute to burnout must persist over an extended duration (Maslach & Goldberg, 1999). There are various proposed models for the progression of burnout, which range from 3 to 12 phases (Bährer-Kohler, 2013). Regardless of the conceptual model, progression through the cycle is often not chronological and the length of each stage varies by individual (Bährer-Kohler, 2013). Severe burnout is often linked with musculoskeletal, cardiovascular or depressive disorders (Ahola & Hakanen, 2014; Leka & Jain, 2010). There is a further link between short term illness and the physical exhaustion component of burnout (Peterson et al., 2011). Indicators of burnout, such as depression and exhaustion are also negatively associated with self-rated health and positively associated with risk of long-term sickness (Peterson et al., 2011).

Research into the effect of work-life imbalance or burnout due to work on health is well established (Cooper et al., 2001; Duxbury & Higgins, 2012; Frone, Russell, & Barnes, 1996; Grant-Vallone & Donaldson, 2001; Madsen, John, & Miller, 2005; Schaufeli & Greenglass, 2001). However, there is limited evidence on the gradation to which burnout symptoms may influence the ability of work-life balance to predict overall health. Specifically, there is a literature gap with respect to the degree and

direction in which burnout mediates the known association between work-life balance and overall health. This vacancy in knowledge serves as the impetus for this epidemiologic study.

1.2 Objectives

The primary objective of this study was to examine the degree in which burnout symptoms influence the relationship between work-life balance and self-rated health. The secondary objective of this study was to examine gender or age interactions on the relationship between burnout symptoms, work-life balance, and self-rated health.

CHAPTER 2 – REVIEW OF LITERATURE

2.1 Employee health and the workplace

As economies and predominant employment sectors have changed and evolved over time in industrialized countries, the types of stress observed and reported have also transformed. With more people working in the service sector, greater attention in the peer-reviewed literature has been paid to the social and psychological aspects of work as opposed to physical stressors (Leka & Jain, 2010). In the 1950s and 1960s, research into the psychosocial work environment and occupational psychology led to a split in focus on the risks observed in the workplace (Leka & Jain, 2010). The focus further narrowed in the 1980s and 1990s with widespread identification of psychosocial risks (or psychosocial hazards) and the development of the new field of occupational health psychology (Leka & Houdmont, 2010).

Although employment is seen as a protective factor when compared to under- or unemployment, stress at work has strong links to a variety of poor health outcomes, absenteeism, and premature death (Wilkinson & Marmot, 2003). Factors such as job security, physical environment, work pace and stress, personal development, and working hours have been reported in research to affect health outcomes (Mikkonen & Raphael, 2010). In addition, high stress levels at work have been linked to high blood pressure, cardiovascular disease, depression, and anxiety (Mikkonen & Raphael, 2010).

2.1.1 Employee self-rated health

Self-rated health or perceived health is one of the most frequently used indicators of health status (Krause & Jay, 1994; Shields & Shooshtari, 2001). Research has shown that, although it is a global health measure, self-rated health primarily reflects a respondent's physical health status (Krause & Jay, 1994). Mental health status is also captured in self-rated health, but to a lesser degree than physical health (Krause & Jay, 1994). It has been identified as a reliable indicator of undiagnosed disease and disease severity (Shields & Shooshtari, 2001; Statistics Canada, 2010). Perceived health has been used to predict mortality, morbidity, use of medical services, and disease trajectories (Shields & Shooshtari, 2001). However, characteristics such as gender and age, can also affect how individuals rate their health. Younger age groups, for example, are more likely to rate their health as 'very good' or 'excellent' (Turcotte, 2011). There is no consensus around the influence of gender on perceived health, some studies have observed that women have lower health scores than men (Franks, Gold, & Fiscella, 2003) and others have observed no gender differences (Turcotte, 2011).

Self-rated health measures have been used in assessments of health behaviours and the psychosocial work environment. Unhealthy behaviours such as alcohol or tobacco use, which are associated with work stress, have been linked with low self-rated health (Shields & Shooshtari, 2001). Perceived health is also associated with job type. Higgins et al. (2004) noted that regardless of gender, study participants in the public sector (as compared to not-for-profit or private sector) were more likely to rate their

health as poor. They suggested that these differences could be associated with participants' age and socio-economic status. Specifically, they found that the private sector had younger employees and the not-for-profit sector had higher wages (Higgins et al., 2004). They also discovered that individuals with high caregiver strain were 1.7 times more likely to rate their perceived health as poor (Higgins et al., 2004).

2.1.2 Employee health and psychosocial risks

Stress research originated with the examination of biological and reflexive responses to acute stress. Cannon first identified the fight-or-flight response to acute stress in animals in the 1920s (Cox & Griffiths, 2010). In the 1950s, this work was expanded upon by Seyle, who studied endocrine responses in mammals under chronic and acute stress (Cox & Griffiths, 2010). In what was referred to as the *General Adaptation Syndrome*, Seyle identified a stage of chronic stress that he called "exhaustion", which is characterized by low energy, low drive, and lack of emotional response. More recently, this stage has also been called 'burnout' (Cox & Griffiths, 2010). These stimulus or response based theories characterize early research into the field of work stress (Cox & Griffiths, 2010).

Modern work stress theories explore the interaction between the employee and their environment. Current theories typically classify stress as a negative experience when the demands on an employee are excessive or make the worker unable to cope

(Cox & Griffiths, 2010). These theories are divided into two categories: interactional and transactional. Interactional theories focus on the structures in place that contribute to stress experienced in the workplace, whereas transactional theories focus on the coping and processing abilities of the individual (Cox & Griffiths, 2010).

The first of these work stress theories was the *Job Demand-Control* theory, initially proposed in the 1970s by Karasek and Theorell (Karasek, 1998). This is an interactional theory that categorizes jobs according to a two-dimensional matrix, with high or low psychological demand on one axis and high or low task control on the other (Cox & Griffiths, 2010; Karasek, 1998). This creates four categories of work: active, passive, high strain, and low strain (Karasek, 1998). These classifications are then used to project stress risks, likelihood of physical illness and potential coping mechanisms (Marmot & Wilkinson, 2006). High strain jobs, such as machine operators or food service workers, are considered to have the greatest risks for strain and physical illness due to the high stress and limited decision making abilities (Cox & Griffiths, 2010; Karasek, 1998). High strain jobs have been associated with high levels of musculoskeletal disorders, asthma, headaches, cardiovascular disease, and somatic disturbances (Oeij, Dhondt, & Wiezer, 2006). Women are also more likely to hold high strain positions which suggests that women are at increased risk for experiencing work stress and physical illness (Karasek, 1998). Johnson and Hall added a third factor, social support, in the late 1980s (Cox & Griffiths, 2010). This factor addressed growing interest in how social support may influence the relationship between health, demand, and control (Cox

& Griffiths, 2010; Marmot & Wilkinson, 2006). It was identified that individuals who have low social support, low task control, and high demands were at the highest risk for stress and illness (Cox & Griffiths, 2010).

Siegrist's (1996) *Effort-Reward Imbalance* model is an interactional theory grounded in the notion of social reciprocity. His model defined social reciprocity as "mutual co-operative investments based on the norm of return expectancy, where efforts are assumed to be equalized by respective rewards" (Marmot & Wilkinson, 2006, p. 103). Under Siegrist's model, stress occurs when this norm is violated. Examples include unfulfilled rewards such as deficiencies in salary, job insecurity, and lack of career advancement (Marmot & Wilkinson, 2006).

Lazarus and Folkman (1987)'s *Transactional* model was built on research that began in the mid-1960s and culminated in the decade-long Berkeley Stress and Coping Project. This model proposes that two key processes influence the relationship between the employee and the environment: cognitive appraisal and coping. Stress occurs when demands exceed our ability to cope (Lazarus & Folkman, 1987, p. 141). The transactional model can also be described in two stages of appraisal of work stress. As an employee experiences stress, they evaluate their initial response to stress in terms of harm or loss, threat, challenge, and benefit (Dewe, O'Driscoll, & Cooper, 2012). In the second phase of the stress experience, the individual determines how to cope. Lazarus and Folkman identified two types of coping mechanisms – problem-focused and emotion-focused – whereby a person can manage stress either through regulating emotions or the situation

(Dewe et al., 2012). Out of these theories, research in the field of occupational health psychology has led to the identification of specific aspects of work that affect health (Leka & Jain, 2010), referred to as psychosocial risks or hazards. It is important to note that as the labour market and the types of jobs people perform change, new risk factors may be identified (Leka & Jain, 2010).

Numerous studies have found an association between self-rated health and one or multiple psychosocial risk factors at work. The *Effort-Reward Imbalance Questionnaire*, which is modeled after Siegrist's *Effort-Reward Imbalance* theory, determined that poor self-rated health was associated with psychosocial work stressors (Weyers, Peter, Boggild, Jeppesen, & Siegrist, 2006). Weyers et al. (2006) further identified links between psychosocial risks and reported poor psychological well-being, including gastrointestinal, cardiovascular and musculoskeletal symptoms.

In their investigation of organizational justice as a psychosocial predictor of health, Elovainio, Kivimäki, and Vahtera (2002) determined that the odds of poor self-rated health were greater for respondents with low organizational justice measures. Organizational justice examines decision making procedures and perceived treatment of an individual (Elovainio et al., 2002). In the workplace, a low organizational justice score would include characteristics such as inconsistent decision making, lack of opportunity to appeal, or personal bias by a supervisor (Elovainio et al., 2002).

A study of nearly 7,000 respondents in post-communist countries, including Poland, Czech Republic, Lithuania, and Hungary, used both the *Job-Demand* theory and *Effort-Reward Imbalance* model to explore the relationship between self-rated health and psychosocial factors at work (Pikhart et al., 2001). Pikhart et al. (2001) considered factors such as job security, salary, social support, and job varieties when conceptualizing the psychosocial work environment. This study uncovered associations between the psychosocial work environment and poor self-rated health (Pikhart et al., 2001). These associations remained significant even when factors such as gender and socioeconomic status were controlled (Pikhart et al., 2001).

2.1.3 Employee health and work-life balance

Prior to the birth of industry and market economies, work was predominantly performed at home (Clark, 2000). Consequently, there was often no divide between work and home (Clark, 2000). Awareness of work-life imbalance arose after the industrial revolution around concerns related to child labour, gendered division of labour, and an emerging emphasis on leisure time (Gambles, Lewis, & Rapoport, 2006; Guest, 2002). The modern era has been marked by the emergence of information technology, rapidly changing job duties, an increase in work pace, and a service economy (Guest, 2002). These changes have brought with them new and unique challenges to work-life balance. The average number of hours worked has increased, the proportion of the population working more than full time has increased, and a rise in

work intensity has been observed (Duxbury & Higgins, 2012; Guest, 2002). There have also been demographic changes, as women, for example, have entered the workforce in increasing numbers (Guest, 2002; National Union of Public and General Employees, 2013). However, despite the increased number of hours of paid work, there has not been a corresponding drop in unpaid work at home, where women remain primary caregivers (National Union of Public and General Employees, 2013). In fact, work-life balance research emerged in the 1980s with the study of women's multiple roles – employee, wife, and caregiver (Rantanen, Kinnunen, Mauno, & Tillemann, 2011). As a result, women are considered an at-risk group for work-life imbalance. Also identified as risk groups are managers, high income earners, and multiple job holders (Guest, 2002). Research also suggests the risk of work-life imbalance becomes greater later in an employee's career (Guest, 2002). As individuals advance in their careers they often perform additional hours of work while also experiencing increased caregiver demands (e.g. children and/or aging parents), both of these factors lead to a work-life imbalance (Guest, 2002).

Work-life balance can be reflected in five descriptive models: segmentation, spillover, compensation, instrumental, and conflict. The predominant model in modern work-life balance research is 'conflict', especially when studying dual income families (Guest, 2002). Spillover and compensation models are also prevalent in literature (Guest, 2002).

In the segmentation model, family is the realm of intimacy and relational, whereas work is competitive and impersonal (Zedeck & Mosier, 1990). In this model, work and family are also given diametrically opposing characteristics. However, segmentation theory is not considered a viable model to describe real world situations and as such receives little attention in the literature. Rather, it is a theoretical possibility that work and non-work have no interactions (Guest, 2002).

Spillover theory suggests that the effects experienced in one realm have secondary and matching effects in another realm (Guest, 2002; Zedeck & Mosier, 1990). For example, negative experiences at work, such as an argument with a colleague, lead to strain at home, such an argument with a spouse. This theory has also been expanded to look at crossover effects, when an individual's family is indirectly affected by positive or negative spillover (Bakker & Demerouti, 2013).

Compensation theory examines how deficiencies experienced in one realm may be compensated for in another (Guest, 2002). This theory has been broken down into supplemental and reactive compensation. Supplemental compensation refers to the pursuit of desirable experiences in family life when work life is unsatisfactory. An example of supplemental compensation would be volunteerism (Guest, 2002; Zedeck & Mosier, 1990). Reactive compensation refers to the need to seek leisure activities or rest outside of work due to strain experienced at work (Zedeck & Mosier, 1990).

Instrumental theory looks at how rewards are obtained in one environment through performance in another (Zedeck & Mosier, 1990). The most common example of this theory is when an employee works long hours or makes personal sacrifices to benefit their family life for a specific purpose, usually a tangible good such as a house (Guest, 2002).

Conflict theory supposes that work and family needs are incompatible with each other and that sacrifices must be made to achieve success in a particular realm or balance (Guest, 2002; Zedeck & Mosier, 1990). This situation is described by Greenhaus and Beutell (1985) as interrole conflict, “when pressures arising in one role are incompatible with pressures arising in another role” (Greenhaus & Beutell, 1985, p. 77). Clark’s border theory focuses on the existence and permeability of an individual’s border between work and home (Clark, 2000). This theory is used to describe an individual’s control over the border and ‘balance’ (Guest, 2002). Additionally, modern research uses conflict theory to examine roles, either by performing an overall appraisal or an investigation of specific components that influence work-life balance (Rantanen et al., 2011). The overall appraisal approach evaluates an equilibrium of work-life roles and assesses resources that are accessed to ensure this balance is maintained (Rantanen et al., 2011). The components method extends this concept further and explores time balance, involvement balance and satisfaction balance as building blocks for work-family balance or imbalance (Rantanen et al., 2011).

Another factor that is important when examining work-life imbalance research is directionality of the work and life relationship. A distinction should be made between work affecting life and life affecting work (Duxbury & Higgins, 2012), although the majority of research explores how work affects life (Guest, 2002).

Work-life imbalance has been associated with overall observed physical symptoms and negative health outcomes such as increased depression, hypertension, and sleep disturbances (Grant-Vallone & Donaldson, 2001; Netemeyer, Boles, & McMurrin, 1996). When directionality of the imbalance is considered, work-affects-life imbalance is associated with poor appetite, fatigue, and somatic tension (Frone et al., 1996). It is also positively correlated to a single-item measure of poor physical health, depression, and heavy alcohol use (Frone et al., 1996). Madsen, John, and Miller (2005) also found a significant relationship between higher employee perceptions of work-to-family or family-to-work conflict and their own perceptions of personal mental and physical health. Similarly, Higgins et al. (2004) determined that high work-life conflict was associated with lower levels of perceived health. Specifically, employees with high work-family interface were 2.4 times more likely to report their health as fair or poor (Higgins et al., 2004). Employees with low work-family interface, on the other hand, were more likely to characterize their overall health as good or excellent (Higgins et al., 2004). Contrary to much of the literature, there were no gender differences in perceived health once job type and dependent care status were taken into account (Higgins et al., 2004).

2.1.4 Employee health and burnout

As indicated previously, there is no universal definition for burnout. It is not defined in the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* or the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition* (Bährer-Kohler, 2013). The term burnout was first used by health service providers to describe a state where employees were overwhelmed by caregiving duties in their job (Leiter, 2010). As a result, early research into burnout tended to focus on the service professions such as health services, medical professions, teaching or therapy (Leiter, 2010; Muheim, 2013). It is now generally accepted that burnout can occur in any occupation that requires intense participation (Leiter, 2010).

Burnout, as a concept, also migrated early into public consciousness. Burnout was first identified theoretically and in popular culture in the 1970s, although its roots are thought to be during the civil service movement encouraged by the United States government in the 1960s (Schaufeli, Leiter, & Maslach, 2009). However, the United States was also undergoing a cultural revolution and the prestige of helping professionals such as physicians, teachers, or law enforcement officers was diminishing (Schaufeli et al., 2009). This led service recipients to expect more from providers while simultaneously respecting and appreciating them less; a perfect storm for burnout (Schaufeli et al., 2009).

Herbert Freudenberger, coined the term 'burnout' in 1974 (Freudenberger, 1974). Freudenberger worked as a clinical psychologist in New York, and at the time he published his findings he was working in a clinic for drug addicts (Muheim, 2013; Schaufeli et al., 2009). He described the loss of motivation or charisma, reduced commitment, and emotional depletion he observed in himself and his colleagues (Freudenberger, 1975). His observations led him to borrow the term commonly used in his practice to describe the long term effects of drug abuse: burnout (Freudenberger, 1975; Muheim, 2013; Schaufeli et al., 2009). In 1976, Christina Maslach was developing her own theory of burnout independent of Freudenberger's work (Muheim, 2013; Schaufeli et al., 2009). Maslach was introduced to the term burnout through her work with poverty lawyers who described loss of commitment, cynicism, and exhaustion while performing their jobs (Muheim, 2013). According to Maslach's model, burnout is a type of prolonged response to chronic emotional and interpersonal stressors on the job (Maslach & Goldberg, 1999). Until the end of the 1970s, burnout research was predominantly focused on the health and human service industry and the provider-recipient relationship (Muheim, 2013).

In the 1980s and 1990s, there was a shift in research focus and methodology. Researchers moved away from small scale case studies, interviews, and site observations to investigations that quantified burnout in large populations through the use of questionnaires or surveys (Muheim, 2013). The first widely used burnout assessment, the *Maslach Burnout Index* (MBI), was developed in 1981 (Maslach,

Schaufeli, & Leiter, 2001). Building on advances made in the field of occupational psychology, a greater emphasis on assessment and increased study sizes were observed (Muheim, 2013). The study populations also expanded into employment sectors such as the military, management, and retail (Muheim, 2013). Burnout began to be viewed as a result of job stress and was linked with many psychosocial risks such as job satisfaction, organizational factors, job control, and support (Muheim, 2013). Today, there is an even greater emphasis on expanding research into different employment sectors, burnout prevention or treatment, and longitudinal studies (Muheim, 2013).

Many researchers have proposed stages, ranging from 3 to 12 steps or models to describe burnout (Burisch, 2006; Cherniss, 1980; Cooper et al., 2001; Kraft, 2006; Maslach et al., 2001) The first model of burnout was proposed by Cherniss (1980), who suggested that individuals and work each contribute to a set of unique demands and supports that influence sources of stress at work. That experience of stress can then lead to attitude changes (Cooper et al., 2001; Richardsen & Burke, 1995). Golembiewski's *Phase Model* and Leiter and Maslach's *Model of Burnout Development* are both oriented around three components: depersonalization, diminished sense of accomplishment, and emotional exhaustion (Cooper et al., 2001). In the burnout context, depersonalization is often found in workplace specific research and may refer to either a service provider's attempts distance themselves from their clients by viewing them as impersonal objects or an employee's adoption of a cynical or indifferent attitude towards their work tasks (Maslach et al., 2001). However, they differ in

proposed chronological order. Golembiewski's model suggests that depersonalization is the first manifestation of burnout (Cooper et al., 2001). This model further proposes that as a result of the disconnect between professional ethics and performance, an employee experiences a diminished sense of accomplishment, and finally emotional exhaustion (Cooper et al., 2001). In contrast, Lieter and Maslach's model begins with emotional exhaustion, as a result of high interpersonal contact and difficult situations (Cooper et al., 2001; Maslach et al., 2001). When an employee feels they have compromised their professional ethics with their altered perception of their clients then they feel diminished personal accomplishment. Depersonalization occurs as a last-resort coping strategy for loss of personal achievement (Cooper et al., 2001; Maslach et al., 2001).

Freudenberger and North proposed a 12 stage model, with the caveat that not all burnout sufferers experience the stages in the exact same order and that not all stages may be experienced (Kraft, 2006). Their proposed stages include:

1. A compulsion to prove oneself
2. Working harder
3. Neglecting their needs
4. Displacement of conflicts
5. Revision of values
6. Denial of emerging problems
7. Withdrawal
8. Obvious behavioural changes
9. Depersonalization

10. Inner emptiness
11. Depression
12. Burnout syndrome

Burisch proposes a seven stage burnout model which begins with excessive output of energy, exhaustion, and which culminates in profound despair, hopelessness, and feelings of futility (Bährer-Kohler, 2013; Burisch, 2006). What these models have in common, and also accepted in the literature, is that physical and emotional exhaustion are at the core of burnout (Leiter, 2010). These models identify behavioural changes (e.g. depersonalization or diminished accomplishment) and the associated outcomes of prolonged exposure (e.g. depression or fatigue) which can be used to assess burnout through a variety of comprehensive or single aspect measurement tools (Leiter, 2010). For example, the MBI provides scores for emotional exhaustion, depersonalization, and personal accomplishment with separate assessments for work and 'general' burnout (Leiter, 2010). On the other hand, the *Copenhagen Burnout Inventory* (CBI) focuses solely on exhaustion but measures its existence in both the home and work realms (Leiter, 2010).

Although the concept of burnout originated in North American workplaces, some aspects may be universal. Turnipseed and Turnipseed (1997) surveyed nurses in the United States and the Philippines to compare levels of burnout and work environment factors that influence burnout. They attributed some of the significant variance they found to cultural differences in the practice of nursing (Turnipseed & Turnipseed, 1997).

For example, the United States tends to reward individual achievement whereas the Philippines tend to value group achievement and decision-making. This may influence perceived work pressure (Turnipseed & Turnipseed, 1997). However, there were no significant differences observed in depersonalization prevalence and work environment scores such as peer cohesion, involvement, and physical comfort (Turnipseed & Turnipseed, 1997). Similarly, a comparison of burnout among German and Chinese teachers also found no significant differences in depersonalization rates, but significant differences in emotional exhaustion and personal achievement (Schwarzer, Schmitz, & Tang, 2000). This suggests that some aspects of burnout may transcend global boundaries (Carod-Artal & Vázquez-Cabrera, 2013; Schaufeli et al., 2009).

Schaufeli et al. (2009) also suggested that there might be a link between economic development and interest in burnout. They noted that as economies developed, research into burnout also emerged – starting the United States in the 1970s, emerging in Western Europe, the Middle East, Latin America and Oceania and, after 2000, in India, China, and Africa (Schaufeli et al., 2009). Although their observation was anecdotal, this has been supported with research, which links globalization to burnout. Kulkarni (2006) noted that population level burnout prevalence in India may be as high as 23-29%. In this editorial, globalization was identified as one of the factors that has led to changes in stress and job stability in the Indian workforce (Kulkarni, 2006). Similarly, a study in Malaysia found a positive correlation between globalization

(quantified using the global demands questions from the *Job Content Questionnaire*), job demands and burnout (Idris, Dollard, & Winefield, 2011).

Surveys conducted in Finland, Sweden, and the Netherlands have identified burnout prevalence rates which have ranged from 2.4-19% in general populations (Bährer-Kohler, 2013; Mohren et al., 2003). When specific careers are considered, especially in medical and health services, burnout prevalence has been reported as high as 72%, which was observed with a cohort of paediatric oncologists (Roth et al., 2011). Consequences of burnout have been identified in both career performance and health behaviour context, including job withdrawal, absenteeism, substance abuse, breakdown of personal relationships, depression, anxiety, cardiovascular disease, and back pain (Maslach & Goldberg, 1999; Nuallaong, 2013). Furthermore, work-life conflict is suggested to be positively correlated to job burnout (Netemeyer et al., 1996). Additionally, it has been suggested that, in terms of directionality, work-affects-life conflict is more strongly related to burnout than life-affects-work conflict (Netemeyer et al., 1996).

Although there is no such thing as a 'burnout personality', certain characteristics are associated with burnout risk. Age, gender, occupation, economic sector, employment status, environmental factors, and societal factors have all been identified as elements that affect an individual's ability to cope with work stress (Bährer-Kohler, 2013; Purvanova & Muros, 2010). For example, unmarried men and divorced women have been identified as individuals most at risk for job burnout (Bährer-Kohler, 2013).

Burnout is a multifaceted condition and although there is no consensus in the literature, research has suggested that the underlying process can be initiated differently within men and women. Some studies have ascribed depersonalization as the primary influence for men and emotional exhaustion as the underlying factor for burnout in women (Bährer-Kohler, 2013). However, there is no consensus in the literature on this matter with other studies suggesting the opposite configuration (Bährer-Kohler, 2013). In both genders, burnout can manifest in sleep disturbance, irritability, lack of concentration, and cynicism (Bährer-Kohler, 2013).

2.2 Psychosocial risk assessments

There are several methods of assessing psychosocial risk, both formal and informal, including generic questionnaires, occupational specific measures or hazard specific measures (Rick, Briner, & Daniels, 2001). Risk assessments are often used to identify and give priority to risk factors in the workplace. The end goal of these assessments, when performed in a workplace, is usually to identify the source of risks as part of a risk management model (Leka & Jain, 2010). Self-reported questionnaires are widely used because of their ease of analysis and low cost (Leka & Jain, 2010). Some examples of widely used instruments are the *Job Content Questionnaire*, the *Effort-Reward Imbalance Questionnaire*, the *Copenhagen Psychosocial Questionnaire*, and the *General Nordic Questionnaire for Psychological and Social Factors at Work* (Leka & Jain, 2010).

2.2.1 Copenhagen Psychosocial Questionnaire

Denmark is a country with nearly 75% union membership, the highest employment rates of women in the European Union, and universal use of social services such as preschool, health care, and maternity benefits (Pejtersen & Kristensen, 2009). There is also a high awareness of and political priority for evaluating and identifying psychosocial risk factors at work by unions and government (Pejtersen & Kristensen, 2009). These stakeholders have worked collaboratively to improve psychosocial work environments and raise awareness of these risk factors. This serves to explain the political and social interest in assessing the psychosocial work environment, leading to the development of the Copenhagen Psychosocial Questionnaire (COPSOQ). The COPSOQ was initially developed in 1997 to measure a broad range of psychosocial risk factors, stress, well-being of employees, and some personality factors in the Danish work environment (Kristensen, Hannerz, Høgh, & Borg, 2005). Labour organizations and government offices approached the Psychosocial Department at the National Institute of Occupational Health in Denmark for recommendations on an appropriate instrument. After evaluation of Danish and international assessments, the Psychosocial Department set out to develop their own questionnaire (Kristensen, Hannerz, et al., 2005). The COPSOQ I includes questions from the Setterlind Stress Profile, Whitehall II, the Short Form-36, the Dutch Questionnaire on the Experience and Assessment at Work, the General Nordic Questionnaire, the Finnish Occupational Stress Questionnaire, the Job-Content

Questionnaire, an assortment of Danish questionnaires and also a number of novel questions (Kristensen, Hannerz, et al., 2005). Three different lengths of questionnaire were developed for multiple users. The long questionnaire was intended for use in research, the medium for use by occupational health professionals and the short version for use in the workplace (Kristensen, Hannerz, et al., 2005). The questionnaire is grounded in theory, but does not ascribe to one specific workplace stress or psychosocial risk theory (Kristensen, Hannerz, et al., 2005). Instead it attempts to amalgamate components of interactional and transactional models such as the *Job Demand-Control-Support* theory and the *Effort-Reward Imbalance* model (Kristensen, Hannerz, et al., 2005). The COPSQ was revised in 2007 (COPSQ II) to include new measures of factors such as burnout, stress, work-family conflicts, reward, justice, trust, and discrimination (Kiss, De Meester, Kruse, Chavée, & Braeckman, 2013; Pejtersen, Kristensen, Borg, & Bjorner, 2010).

Both versions of the COPSQ have been validated in numerous and disparate countries (e.g. China, New Zealand, Australia, Spain), and the questionnaires have been translated into more than 25 languages (“COPSQ International Network,” n.d.). COPSQ versions I and II have both been used in a variety of work environments and are intended to be used to drive change at the workplace level. In other words, it was not intended for use by individual employees as a diagnostic tool (Pejtersen et al., 2010). Additionally, questions around work-life balance in the COPSQ II differentiate between work-life and life-work interactions. The COPSQ II also attempts to break

burnout down to its component parts with questions around both the physical and emotional symptoms of burnout (Pejtersen et al., 2010).

CHAPTER 3 - METHODS

3.1 Research design

In 2009, the Occupational Health Clinics for Ontario Workers (OHCOW) developed a Mental Injury Toolkit (MIT) to educate workers and employers about stress in the workplace. As a part of the toolkit, OHCOW provides a modified version of the COPSOQ II to give employers feedback on psychosocial hazards in their workplace (Occupational Health Clinics for Ontario Workers, 2013). In 2012, the MIT was launched and a webinar was held to introduce the toolkit. Stakeholders from a variety of industries interested in preventing mental injury in the workplace attended this event. Launch webinar attendees were invited to complete the survey so that OHCOW could provide their responses as an example to workplaces that deliver the MIT survey. This secondary data analysis investigation uses a cross-sectional study design to analyze the MIT launch survey data on psychosocial risk factors. The research ethics board at Brock University has given approval for secondary data analysis (Appendix 1).

3.2 Participants

Data was collected from participants who attended the MIT launch event on October 10, 2012. In conjunction with their registration for the MIT launch event, launch participants were sent a link using SurveyMonkey.com with the MIT survey. A total of 250 participants received the survey link between October 3, 2012 and December 23,

2012. A total of 220 participants completed the MIT survey for a response rate of 88%. Gender identification included 147 female, 60 male, while 13 declined to answer.

3.3 Data collection procedures

An email was sent to participants who registered for the MIT launch event requesting that the survey be completed prior to the event. During the MIT launch, participants were reminded of the link and encouraged to complete the survey. The survey remained active until December 23, 2012 and 35 survey respondents submitted responses after the MIT launch event. Participants could decline to answer any question and were not required to finish the survey at any one point in time.

3.4 Measurements

The MIT survey is a modified form of the short version of the COPSOQ II (Oudyk, 2012). However, it uses questions from the long version for five symptom categories (burnout, stress, sleep troubles, cognitive, and somatic symptoms) (Oudyk, 2012). Additionally, questions regarding mental illness or depression were omitted out of concern that it could enable identification and labeling of an employee respondent by a potential employer using the MIT survey (Oudyk, 2012). The MIT questionnaire was reproduced in Appendix 2.

3.4.1 Demographics

Demographic data was collected for all survey respondents including age, gender, and economic sector. Age was a grouped variable with the following options: under 20 years old, 20-29 years old, 30-39 years old, 40-49 years old, 50-59 years old, and 60 or more years old. Gender included the response options 'woman' or 'man'. There are twenty response options for economic sector (Appendix 2). Examples of economic sector include Health Care and Social Assistance, Public Administration, Educational Services, or Retail Trade.

3.4.2 Self-rated overall health

The MIT survey includes one question on self-rated overall health (question 32). Respondents were asked to rate their health during the last four weeks using a 5-point Likert scale ranging from poor (0) to excellent (4) health.

3.4.3 Work-life balance

Two questions in the MIT survey address work-life balance (questions 26 and 27). Participants were instructed to answer questions about how work affects their private life and family life using a 4-point Likert scale. A score for each question was provided between 0 and 3. An overall score for work-life balance was generated by adding the

scores for questions 26 and 27. The specific questions regarding work-life balance included:

Question 26. Do you feel that your work drains so much of your energy that it has a negative effect on your private life?

Question 27. Do you feel that your work takes so much of your time that it has a negative effect on your private life?

3.4.4 Burnout symptoms

Four questions in the MIT survey addressed burnout symptoms (questions 33, 34, 39, and 41). The MIT survey uses burnout questions from the long version of the COPSQ II, which were adapted from the personal burnout scale from the Copenhagen Burnout Index. The Copenhagen Burnout Index was developed to look at burnout from a comprehensive manner, as opposed to independently assessing the three dimensions of burnout (depersonalization, exhaustion, and personal accomplishment) found in the MBI (Kristensen, Borritz, Villadsen, & Christensen, 2005). Kristensen et al. (2005) also suggested that the MBI was skewed towards assessing burnout in the human service work and chose items (personal burnout, work-related burnout, and client-related burnout) for the Copenhagen Burnout Index to allow for a more generic tool. The four burnout questions that were selected for inclusion in the COPSQ II were found to have strong correlations with other items and displayed good internal validity (Pejtersen et al., 2010).

Participants were asked to provide a rating for a variety of health and well-being indicators over the last four weeks included in the four burnout questions using a 5-point Likert scale. A score for each question was provided between 0 and 4. An overall score for burnout was generated by adding the scores for questions 33, 34, 39, and 41. The specific questions regarding burnout included:

Question 33. How often have you felt worn out?

Question 34. How often have you been emotionally exhausted?

Question 39. How often have you been physically exhausted?

Question 41. How often have you felt tired?

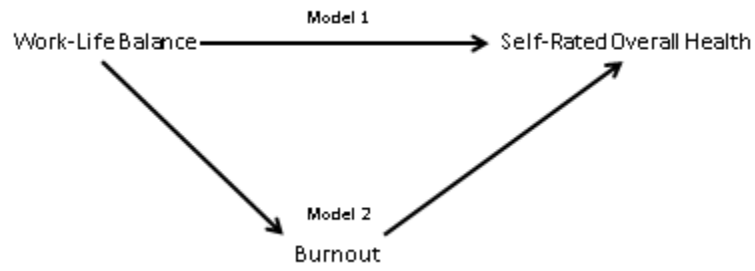
3.5 Statistical analyses

All statistical analyses were performed using SPSS, Version 22 (IBM Corp., 2013). Descriptive statistics were calculated including mean and standard deviation for subject self-rated health, individual work-life balance questions, overall work-life balance score, individual burnout questions, and overall burnout score. Independent *t*-tests were completed to compare differences between high and low overall self-rated health scores for individual work-life balance questions, overall work-life balance score, individual burnout questions, and overall burnout score. A Chi square analysis was used to compare the economic sectors by high and low self-rated health. One-way analysis of variance (ANOVA) was conducted to determine whether differences existed by gender or age for self-rated health. Independent *t*-tests were completed to compare differences

between pre- and post-launch respondents for age, gender, overall work-life balance score, overall burnout score, and self-rated health. A Cronbach's alpha was calculated to estimate the reliability of the instrument on burnout.

In order to examine the degree and direction in which burnout influences the relationship between work-life balance and self-rated health, we incorporated a multiple linear regression analyses. Two regression models were tested (Figure 3.1). Model 1 examined the effect of work-life balance on self-rated health. Model 2 examined the influence of burnout on the relationship between work-life balance and self-rated health. The degree in which the unstandardized *b*-coefficient changes from model 1 to model 2 with respect to work-life balance determined the degree and direction of mediating influence by burnout. Additional regressions were performed to examine the effect of work-life balance on burnout and the effect of burnout on self-rated health. Additional models to examine the influence of a moderating gender or age influence were considered, but rejected when no significant differences were found between gender or age for self-rated health. A conceptual model of this analysis is illustrated in Figure 3.1. In all models, we controlled for age, gender, and employment sector. Age and gender have previously been identified as influencing an individual's work-life balance and self-rated health (Duxbury & Higgins, 2012; Guest, 2002; Turcotte, 2011). We chose to control for employment sector because job type has been identified to influence burnout scores in the COPSQ II. Level of significance for all analytic analysis was set at $\alpha=0.05$.

Figure 3.1 Illustration of the regression models



CHAPTER 4 – RESULTS

4.1 Sample characteristics

Of the 220 participants who completed the survey, 189 identified their gender. 132 identified as female and 57 identified as male. There was no significant difference in self-rated health by gender [$F(1, 187) = 0.395, p = 0.53$]. Table 4.1 displays the count, mean and standard deviation of self-rated health by gender. A total of 191 subjects identified their age range. There was no significant difference in self-rated health by grouped age [$F(4, 186) = 0.995, p = 0.41$]. Table 4.2 displays the count, mean, and standard deviation of self-rated health by age group. The percentage of participants with high or low self-rated health did not differ by economic sector, [$\chi^2(13, N = 168) = 8.70, p = 0.82$]. See Table 4.3 for counts for each economic sector by low or high self-rated health. The burnout instrument was found to be highly reliable (4 items; $\alpha = .90$).

Table 4.1 Analysis of variance for self-rated health by gender

	N	Mean (SD)
Number of Subjects (Gender)	189	2.19 (0.09)
Female	132	2.21 (0.92)
Male	57	2.12 (0.85)

Noted: no significant findings

Table 4.2 Analysis of variance for self-rated health by age group

	N	Mean (SD)
Number of Subjects (Age)	191	2.17 (0.90)
20-29 years old	8	2.13 (0.84)
30-39 years old	36	2.19 (0.86)
40-49 years old	66	2.33 (0.77)
50-59 years old	67	2.04 (0.98)
60 or more years old	14	2.17 (1.24)

Noted: no significant findings

Table 4.3 High and low self-rated health by economic sector

	Low Self-Rated Health	High Self-Rated Health
Economic sector (all)	37 (22.0%)	131 (78.0%)
Health care and social assistance	13 (18.3%)	58 (81.7%)
Other services (except public administration)	9 (32.1%)	19 (67.9%)
Public administration	3 (15.0%)	17 (85.0%)
Educational services	3 (30.0%)	7 (70.0%)
Professional, scientific and technical services	1 (11.1%)	8 (88.9%)
Utilities	3 (37.5%)	5 (62.5%)
Manufacturing (including food, textiles, clothing, paper, metal, machinery, etc.)	1 (20.0%)	4 (80.0%)
Retail trade	1 (25.0%)	3 (75.0%)
Transportation and warehousing	2 (50.0%)	2 (50.0%)
Finance and insurance	1 (33.3%)	2 (66.7%)
Administrative and support, waste management and remediation services	0 (0.0%)	3 (100.0%)
Information and cultural industries	0 (0.0%)	1 (100.0%)
Mining and oil and gas extraction	0 (0.0%)	1 (100.0%)
Accommodation and food services	0 (0.0%)	1 (100.0%)

Noted: no significant findings

4.2 Pre- and Post- Launch responses

Table 4.4 displays the result of a series of t-tests performed to determine the difference between age, gender, self-rated health, overall work-life balance score and overall burnout score by pre- or post- launch response status.

Table 4.4 Pre- and Post-Launch t-tests

	Entire Sample Mean (SD)	Pre-Launch (SD)	Post-Launch (SD)
Gender	2.19 (0.09)	1.28 (0.45)	1.37 (0.49)
Age	2.17 (0.90)	4.26 (0.96)	3.83 (1.12)
Self-Rated Health	2.17 (0.90)	2.20 (0.90)	2.00 (0.90)
Overall Work-Life Balance score	3.26 (1.70)	3.16 (1.71)	3.82 (1.57)
Overall burnout score †	9.13 (3.25)	8.96 (3.24)	10.14 (3.17)

Noted: no significant findings

4.3 Work-life balance and burnout (individual and overall score) by low and high self-rated health

Table 4.5 outlines work-life balance and burnout (individual and overall) scores, grouped by low ('fair' or 'poor' response) or high self-rated health ('good', 'very good' or 'excellent'). Respondents with high self-rated health scores had significantly lower ($p < 0.01$) work-life balance for both work-life balance questions and significantly lower ($p < 0.05$) overall work-life balance. Additionally, respondents with high self-rated health had significantly lower individual and overall burnout scores ($p < 0.01$).

Table 4.5 Work-life balance and burnout questions by low and high self-rated health

	Entire Sample Mean (SD)	Low Mean (SD)	High Mean (SD)
Q: Work takes <u>energy</u> ? †	1.82 (0.90)	2.38 (0.80)	1.67 (0.87)
Q: Work takes <u>time</u> ? †	1.43 (0.99)	1.47 (1.04)	1.35 (0.97)
Overall work-life balance score *	3.26 (1.70)	4.12 (1.63)	3.02 (1.66)
Q: Worn out? †	2.35 (0.93)	3.05 (0.76)	2.15 (0.88)
Q: Emotionally exhausted? †	2.12 (0.96)	2.74 (0.86)	1.95 (0.92)
Q: Physically exhausted? †	2.19 (0.92)	2.95 (0.81)	1.98 (0.84)
Q: Felt tired? †	2.52 (0.91)	3.12 (0.87)	2.35 (0.86)
Overall burnout score †	9.13 (3.25)	11.95 (2.77)	8.37 (2.94)

† = Level of significance ($p < 0.01$)

* = Level of significance ($p < 0.05$)

4.4 Regression analysis

Table 4.6 reports the results of the multiple linear regression analysis. Self-rated health was selected as the outcome variable. In Model 1, the main effect of the overall work-life balance score on the self-rated health score was inversely significant ($p < 0.01$) after controlling for gender, age, and economic sector. The admission of burnout in Model 2 was statistically significant ($p < 0.01$) and mediated the relationship between work-life balance and self-rated health by 96%. Together, work-life balance and burnout account for 30.3% of the variance in self-rated health.

Figure 4.1 displays the unstandardized *b*-coefficients for the mediation. This shows that work-life balance is significantly and positively related to burnout and that

burnout is significantly and negatively related to self-rated health. Work-life balance is also significantly and negatively related to self-rated health. With the inclusion of burnout, the relationship between work-life balance and self-rated health is no longer significant which demonstrates full mediation.

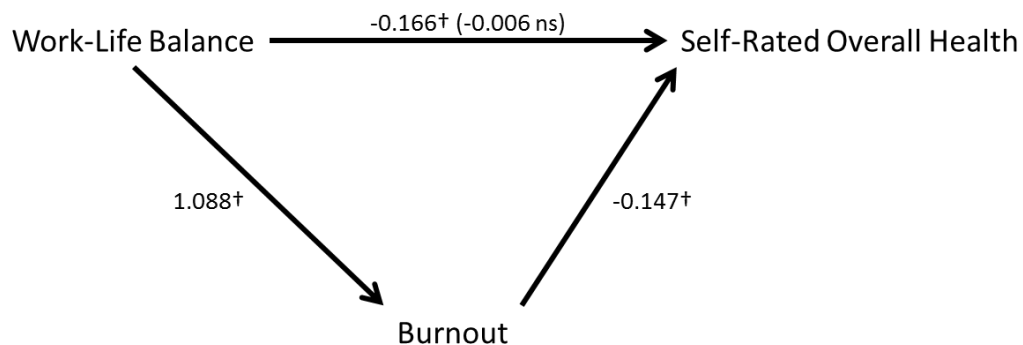
Table 4.6 Self-rated health regressed on work-life balance and burnout

Variables	Model 1	Model 2
Work-life balance	-0.166 (0.039) †	-0.006 (0.043)
Age	-0.045 (0.070)	-0.031 (0.062)
Gender	-0.015 (0.151)	-0.112 (0.134)
Economic sector	0.012 (0.015)	0.015 (0.013)
Burnout		-0.145 (0.022) †
Constant	2.742	3.577
<i>R-squared</i>	0.113	0.303

Noted: Unstandardized *b*-coefficients are reported with standard error in parentheses.

† = $p < 0.01$

Figure 4.1 Illustration of the mediation models



Noted: Unstandardized *b*-coefficients are reported.

† = $p < 0.01$

CHAPTER 5 – DISCUSSION

5.1 Introduction

The Mental Injury Toolkit and survey provide employees with information regarding overall health, psychosocial risk factors in their workplace, and prevention strategies for mental injury. Data gathered from the survey is intended to support evidence-based changes in policy and working conditions (Occupational Health Clinics for Ontario Workers, 2013). The primary objective of this investigation was to examine the degree in which burnout symptoms mediate the relationship between work-life balance and self-rated health. The results demonstrate that a worker's perceived health is influenced by factors both inside and outside the workplace. More specifically, this study demonstrates that work-life balance is largely mediated by burnout when predicting self-rated overall health. This relationship, however, is not influenced by age or gender.

5.2 Differences in self-rated health

Studies have suggested that age and gender may influence or confound predictors of self-rated health (Franks et al., 2003; Higgins et al., 2004; Shields & Shooshtari, 2001), but this study found no significant differences between groups in these two variables. Consequently, the secondary objective of this study – to examine the influence of age or gender interactions – was not pursued.

Researchers have noted conflicting results with respect to perceived health relative to gender among employees (Franks et al., 2003; Turcotte, 2011). Franks et al.

(2003) examined self-rated health against a number of different socio-demographic and employment factors and found that women reported lower health status on all subscales. However, the 2009 Canadian Community Health Survey found that age influenced predicted health but that no gender differences in self-rated health were observed (Turcotte, 2011). Higgins et al. (2004) reported that there are no differences in perceived health by gender when job type is taken into account. This would suggest that gender differences observed in perceived health are likely due to life circumstances or social factors rather than biological vulnerabilities (Higgins et al., 2004). Social factors are not quantified in the MIT survey so no conclusions can be drawn, however the lack of significant results may support that there is no biological difference between genders, which could explain differences in perceived health. Additionally, 70% of survey respondents self-reported as female. It is possible that a gender interaction may have been observed with an equal distribution of male and female respondents.

Previous studies have suggested that younger individuals have higher self-rated health (Turcotte, 2011). In this study, there were no significant differences in self-rated health based on age group. However, 70% of MIT survey respondents are between 40 to 60 years of age. It is possible that a sample population with an equal distribution of age groups may find significant differences in self-rated health.

The results of this study also confirm previous findings that low self-rated health is associated with a high work-life imbalance. Higgins et al. (2004) determined that individuals with high work-to-family interference are 2.4 times more likely to rate their

health as fair or poor. Additionally, they discovered that employees with high role overload are nearly three times more likely to rate their health as fair or poor (Higgins et al., 2004). They suggest that these measures are strongly associated with factors such as work demands, hours worked, and unpaid overtime (Higgins et al., 2004). This is significant to the findings of this study because the MIT survey examines the effects of role overload and work demands on work-life balance by quantifying employees' perception of how work time and effort negatively affect their home life. Furthermore, high amounts of time dedicated to work roles have previously been shown to be associated with high burnout values (Fong, 1993).

5.3 Mediating role of burnout

Existing literature has demonstrated that work-life imbalance is positively correlated with burnout (Montgomery, Panagopolou, Wildt, & Meenks, 2006; Peeters et al., 2005) and that burnout is correlated to low self-rated health (Higgins et al., 2004; Madsen et al., 2005; Peterson et al., 2011; Schaufeli, Taris, & Van Rhenen, 2008). The regression analysis in this study indicates that burnout is a significant contributor to the relationship between work-life balance and self-rated health. Together with work-life balance, burnout accounts for 30.3% of the total variance in self-rated health. The addition of burnout to Model 2 added 19% total explained variance in self-rated health and reduced the predictive influence of work-life balance by 96%.

The MIT conceptualizes work-life balance by measuring employees' perception of how the energy and time, classified as job demands and work or role overload, attributed to work affects their home life. Greenhaus et al. (2003) identified 'time balance' as a source of conflict between work and home and determined that individuals who spent more time at work experienced a lower quality of life. This is also observed in MIT survey respondents, individuals with low self-rated health report feeling that the time spent at work affects their personal life more negatively than individuals with high self-rated health. Nitzsche et al. (2013) found that the more individuals perceive their home lives to be negatively affected by their work, the more at risk they were for exhaustion. Maslach and Leiter (2008) note that work overload leads to diminished ability to meet job demands and contributes to exhaustion. Burnout is likely to occur under circumstances where these job conditions are chronic and employees are not given the opportunity to recover at home or work (Maslach & Leiter, 2008). Work factors that contribute to burnout or hinder recovery, such as job demands or work overload, have been well established in the literature (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Maslach & Leiter, 2008; Merecz & Andysz, 2014; Montgomery, Panagopolou, & Benos, 2006). In this study, factors such as job demands or work overload may explain some the shared variance between work-life balance and burnout and the strength of burnout as a mediator. Additionally, these factors may have an effect in the home as well as on an individual's overall perceived health.

Gryzwacz (2000) suggested that a poor work-life balance can undermine support mechanisms, exacerbate job demands, and weaken social ties; all of which, they noted, have important implications for an individual's health and wellbeing. Bakker and Demerouti (2013) also demonstrated that when job demands and burnout spill over into the home domain, this leads to diminished social support between partners. This support has been identified as a protective factor for health and wellbeing against stress through two mechanisms: the attenuation or prevention of a stress appraisal response and the reduction or elimination of the biological stress reaction (Cohen & Wills, 1985). The results from this study suggest that job demands and burnout influence an individual's personal life and perceived health. It is also possible that social support and its influence on the stress response explains the mechanism for this observation. Burnout has also been shown to mediate the relationship between self-rated health and partner burnout (Bakker, 2009). Bakker (2009) suggested that work-related strain or burnout interferes with private life and contributes to partner well-being. The results from our study suggest that the converse may also be true; that work-life conflict interferes with personal well-being through an individual's level of burnout.

There is a growing movement to investigate burnout outside of the occupational context (Bianchi, Truchot, Laurent, Brisson, & Schonfeld, 2014). Bianchi et al. (2014) state that Maslach's model – the predominant theory in burnout research – has positioned burnout as solely a product of work stressors. However, research has linked burnout with a variety of non-work influences such as family responsibilities, history of

mental illness and personal life events (Dyrbye et al., 2006; Greenglass & Burke, 1988; Lopes Cardozo et al., 2012). This study has demonstrated that some of the variance in burnout can be explained by an individual's work-life balance score and that non-work factors should be considered when assessing an individual's burnout experience.

5.4 Limitations

This study incorporated a cross-sectional design, which does not allow for the establishment of causality. Performing a longitudinal investigation could help to establish a causal relationship between burnout, work-life balance, and self-rated health. The causal steps approach to mediation is widely used in health and social science research, however critics have noted concerns regarding its use with sample sizes lower than approximately 20,000 (MacKinnon & Fairchild, 2009). As well as its inference of mediation through calculation of an indirect effect as opposed to an intervening effect (Hayes, 2009).

Furthermore, in this study the average burnout score reported was more than 68% worse than the COPSOQ's Danish reference sample (Oudyk & Lacoste, 2012). This may be due in part to trends in respondents' occupation sector. In this study, 77% of the respondents reported working in the health and human service sectors. Although burnout can occur in any occupation, burnout scores are often high in health service providers and those who work closely with people (Carod-Artal & Vázquez-Cabrera, 2013; Maslach & Jackson, 1981; Ruotsalainen, Verbeek, Mariné, & Serra, 2014). These

sample characteristics suggest the need to be cautious in the application of the observed results to a general population.

5.5 Future Research

This study demonstrates that burnout is a very strong mediator in the relationship between work-life balance and self-rated health. Burnout is also associated with a number of other psychosocial risk factors and workplace conditions. Duxbury and Higgins (2012) have also identified trends related to number of hours worked, types of shifts, and flexible work arrangements which influence a work-life imbalance. An important area of future research could examine the MIT survey data with the intent of exploring trends in the context of self-rated health and burnout.

The literature has established that self-rated health measures both physical and mental factors (Fayers & Sprangers, 2002; Shields & Shooshtari, 2001), but the MIT survey does not seek to individually assess these factors. On the other hand, it does include burnout measurements for physical and emotional exhaustion. Modification of the MIT to include mental and physical self-reported health measures could provide additional insight into the relationships between work-life balance, burnout, and self-rated health.

Burnout risk factors are typically identified at the employee level (e.g. job demands or coping skills) or organizational level (e.g. organizational culture, work flow and management support) (Hämmig, 2014; Walter, Plaumann, & Krugmann, 2013).

Prevention strategies address these risk factors at one or both of these levels (Walter et al., 2013). However, there is minimal research into the efficacy of workplace health interventions that target improvements to employee work-life balance (Hämmig, 2014). Furthermore, there is also limited evidence on the positive predictors or outcomes of work-life interaction and employee health (Hämmig, 2014). The results of this study indicate that work-life balance is an important component of both burnout and employee health. An important area of future research would be the development of health promotion and burnout prevention campaigns based on both positive and negative aspects of work-life balance.

5.6 Conclusions and Implications

The results of this study support previous published research that demonstrate that high levels of burnout or work-life imbalance are associated with poor self-rated health or health outcomes. Job demands and work have previously been identified as precursors to burnout and poor health outcomes. This study examined these factors in the context of how an employee believes they affect their home life and found that the work-life balance score significantly predicts self-rated health. However, when burnout is considered, the predictive influence of work-life balance is largely mediated by burnout. Job demands and work may influence burnout and self-rated health either directly or indirectly through work-life balance. Traditionally, burnout has been assessed solely through work experiences. However, the strength of the relationship that was

demonstrated between work-life balance and burnout in this study suggests that a greater understanding of burnout is warranted.

Stress in the workplace can affect an employee's health, social relationships and work-life balance. When this stress is chronic and culminates in burnout, the impacts can be even more severe for not only the individual but also the corporation, health system and economy. The potential exists that workplace health promotion strategies that address preserving a balance between work and home may improve health and reduce burnout. These programs currently exist in many workplaces – especially large and multinational companies – but evaluation, especially of organizational level interventions, is limited (Walter et al., 2013). Furthermore, the perceived and real barriers to employee access (e.g. informal organizational culture or corporate policies) must also be addressed when evaluating efficacy (Walter et al., 2013). The increasing levels of work-life imbalance and stress observed in the Canadian workforce lends support to the timeliness and importance of these types of interventions.

REFERENCES

- Ahola, K., & Hakanen, J. (2014). *Burnout at Work: A Psychological Perspective*. (M. P. Leiter, A. B. Bakker, & C. Maslach, Eds.). Psychology Press.
- Bährer-Kohler, S. (2013). Introduction. In S. Bährer-Kohler (Ed.), *Burnout for Experts* (pp. 1–14). Boston, MA: Springer US. Retrieved from <http://link.springer.com/10.1007/978-1-4614-4391-9>
- Bakker, A. B. (2009). The crossover of burnout and its relation to partner health. *Stress and Health, 25*(4), 343–353.
- Bakker, A. B., & Demerouti, E. (2013). The spillover-crossover model. In *New Frontiers in Work and Family Research* (pp. 54–70). Hove, United Kingdom.: Psychology Press.
- Bianchi, R., Truchot, D., Laurent, E., Brisson, R., & Schonfeld, I. S. (2014). Is burnout solely job-related? A critical comment. *Scandinavian Journal of Psychology, 55*(4), 357–361.
- Burisch, M. (2006). *Das Burnout-Syndrom –Theorie der inneren Erschöpfung*. Heidelberg: Springer.
- Carod-Artal, F. J., & Vázquez-Cabrera, C. (2013). Burnout Syndrome in an International Setting. In S. Bährer-Kohler (Ed.), *Burnout for Experts* (pp. 15–36). Boston, MA: Springer US.
- Cherniss, C. (1980). *Professional burnout in human service organizations*. Praeger.
- Clark, S. C. (2000). Work/Family Border Theory: A New Theory of Work/Family Balance. *Human Relations, 53*(6), 747–770.
- Cohen, S., & Wills, T. A. (1985). Stress, Social Support and the Buffering Hypothesis. *Psychological Bulletin, 98*(2), 310–357.
- Cooper, C. L., Dewe, P., & O’Driscoll, M. P. (2001). *Organizational stress: a review and critique of theory, research, and applications*. Thousand Oaks, Calif. : Sage, c2001.

COPSOQ International Network. (n.d.). Retrieved November 5, 2014, from <http://www.copsoq-network.org/index.php>

Cox, T., & Griffiths, A. (2010). Work-Related Stress: A Theoretical Perspective. In S. Leka & J. Houdmont (Eds.), *Occupational Health Psychology* (2nd ed.). Wiley-Blackwell.

Cox, T., Griffiths, A., & Rial-González, E. (2000). *Research on work-related stress*. Luxembourg; Lanham, Md.: Office for Official Publications of the European Communities ; Bernan Associates [distributor].

Crompton, S. (2011). What's stressing the stressed? Main sources of stress among workers.

Retrieved from

http://boards.amssa.org/research/members/downloadFile/file:1318548258_11562_eng.pdf

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512.

Dewe, P. J., O'Driscoll, M. P., & Cooper, C. L. (2012). Theories of Psychological Stress at Work. In R. J. Gatchel & I. Z. Schultz (Eds.), *Handbook of Occupational Health and Wellness* (pp. 23–38). Boston, MA: Springer US.

Duxbury, L., & Higgins, C. (2001). *Work-Life Balance in the New Millennium: Where Are We?*

Where Do We Need to Go?. Retrieved from

http://www.rcrpp.org/documents/7314_en.PDF

Duxbury, L., & Higgins, C. (2012). *Revisiting Work-Life Issues in Canada : The 2012 National Study on Balancing Work and Caregiving in Canada*. Retrieved from

<http://www.healthyworkplaces.info/wp-content/uploads/2012/11/2012-National-Work-Long-Summary.pdf>

- Dyrbye, L. N., Thomas, M. R., Huntington, J. L., Lawson, K. L., Novotny, P. J., Sloan, J. A., & Shanafelt, T. D. (2006). Personal life events and medical student burnout: a multicenter study. *Academic Medicine, 81*(4), 374–384.
- Elovainio, M., Kivimäki, M., & Vahtera, J. (2002). Organizational Justice: Evidence of a New Psychosocial Predictor of Health. *American Journal of Public Health, 92*(1), 105–108.
- Fayers, P. M., & Sprangers, M. A. (2002). Understanding self-rated health. *The Lancet, 359*(9302), 187–188.
- Fong, C. M. (1993). A Longitudinal Study of the Relationships Between Overload, Social Support, and Burnout Among Nursing Educators. *Journal of Nursing Education, 32*(1), 24–29.
- Franks, P., Gold, M. R., & Fiscella, K. (2003). Sociodemographics, self-rated health, and mortality in the US. *Social Science & Medicine, 56*(12), 2505–2514.
- Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues, 30*(1), 159–165.
- Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative institutions. *Psychotherapy: Theory, Research & Practice, 12*(1), 73.
- Frone, M. R., Russell, M., & Barnes, G. M. (1996). Work–family conflict, gender, and health-related outcomes: A study of employed parents in two community samples. *Journal of Occupational Health Psychology, 1*(1), 57.
- Gambles, R., Lewis, S., & Rapoport, R. (2006). *The Myth of Work-Life Balance: The Challenge of Our Time for Men, Women and Societies*. John Wiley & Sons.
- Grant-Vallone, E. J., & Donaldson, S. I. (2001). Consequences of work-family conflict on employee well-being over time. *Work & Stress, 15*(3), 214–226.
- Greenglass, E. R., & Burke, R. J. (1988). Work and family precursors of burnout in teachers: Sex differences. *Sex Roles, 18*(3-4), 215–229.

- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of Conflict between Work and Family Roles. *The Academy of Management Review*, 10(1), 76.
- Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The relation between work–family balance and quality of life. *Journal of Vocational Behavior*, 63(3), 510–531.
[http://doi.org/10.1016/S0001-8791\(02\)00042-8](http://doi.org/10.1016/S0001-8791(02)00042-8)
- Grzywacz, J. G. (2000). Work-Family Spillover and Health During Midlife: Is Managing Conflict Everything? *American Journal of Health Promotion*, 14(4), 236–243.
- Guest, D. E. (2002). Perspectives on the Study of Work-life Balance. *Social Science Information*, 41(2), 255–279.
- Hämmig, O. (2014). Integration of Work and Personal Life as a Key Factor for Individual, Organizational and Public Health. In G. F. Bauer & O. Hämmig (Eds.), *Bridging Occupational, Organizational and Public Health* (pp. 155–175). Dordrecht: Springer Netherlands. Retrieved from <http://link.springer.com/10.1007/978-94-007-5640-3>
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408–420.
- Higgins, C. A., Duxbury, L. E., & Johnson, K. L. (2004). *Exploring the link between work-life conflict and demands on Canada's health care system report three*. [Ottawa]: Health Canada.
- Hill, E. J., Miller, B. C., Weiner, S. P., & Colihan, J. (1998). Influences of the Virtual Office on Aspects of Work and Work/Life Balance. *Personnel Psychology*, 51(3), 667–683.
- IBM Corp. (2013). IBM SPSS Statistics for Windows (Version 22) [Windows]. Armonk, NY: IBM Corp.

- Idris, M. A., Dollard, M. F., & Winefield, A. H. (2011). The effect of globalization on employee psychological health and job satisfaction in Malaysian workplaces. *Journal of Occupational Health, 53*(6), 447–454.
- Karasek, R. (1998). Demand/control model: A social, emotional, and physiological approach to stress risk and active behaviour development. In *Encyclopaedia of Occupational Health and Safety* (Vol. 2, pp. 34.6–34.14). Geneva, Switzerland: International Labour Office.
- Kiss, P., De Meester, M., Kruse, A., Chavée, B., & Braeckman, L. (2013). Comparison between the first and second versions of the Copenhagen Psychosocial Questionnaire: psychosocial risk factors for a high need for recovery after work. *International Archives of Occupational and Environmental Health, 86*(1), 17–24.
- Kraft, U. (2006, July). Burned Out. *Scientific American Mind, 17*(3), 29–33.
- Krause, N. M., & Jay, G. M. (1994). What Do Global Self-Rated Health Items Measure? *Medical Care, 32*(9), 930–942.
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192–207.
- Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health, 438–449*.
- Kulkarni, G. (2006). Burnout. *Indian Journal of Occupational and Environmental Medicine, 10*(1), 3.
- Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*(3), 141–169.

- Leiter, M. P. (2010). Burnout. *Corsini Encyclopedia of Psychology*. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/9780470479216.corpsy0148/full>
- Leka, S., & Cox, T. (2010). Psychosocial Risk Management at the Workplace Level. In S. Leka & J. Houdmont (Eds.), *Occupational Health Psychology*. John Wiley & Sons.
- Leka, S., & Houdmont, J. (2010). An Introduction to Occupational Health Psychology. In S. Leka & J. Houdmont (Eds.), *Occupational Health Psychology* (2nd ed.). Wiley-Blackwell.
- Leka, S., & Jain, A. (2010). *Health Impact of Psychosocial Hazards at Work: An Overview*. World Health Organization. Retrieved from <http://apps.who.int/iris/handle/10665/79170>
- Lopes Cardozo, B., Gotway Crawford, C., Eriksson, C., Zhu, J., Sabin, M., Ager, A., ... Simon, W. (2012). Psychological Distress, Depression, Anxiety, and Burnout among International Humanitarian Aid Workers: A Longitudinal Study. *PLoS ONE*, *7*(9), e44948.
- MacKinnon, D. P., & Fairchild, A. J. (2009). Current directions in mediation analysis. *Current Directions in Psychological Science*, *18*(1), 16–20.
- Madsen, S. R., John, C., & Miller, D. (2005). Work-family conflict and health: A study of the workplace, psychological, and behavioral correlates.
- Marmot, M., & Wilkinson, R. (Eds.). (2006). *Social Determinants of Health* (Second). Oxford, UK: Oxford University Press.
- Maslach, C., & Goldberg, J. (1999). Prevention of burnout: New perspectives. *Applied and Preventive Psychology*, *7*(1), 63–74.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior*, *2*(2), 99–113.
- Maslach, C., & Leiter, M. P. (2008). Early predictors of job burnout and engagement. *Journal of Applied Psychology*, *93*(3), 498–512.

- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job Burnout. *Annual Review of Psychology*, 52(1), 397–422.
- Merecz, D., & Andysz, A. (2014). Burnout and demographic characteristics of workers experiencing different types of work-home interaction. *International Journal of Occupational Medicine and Environmental Health*, 27(6), 933–949.
- Mikkonen, J., & Raphael, D. (2010). *Social determinants of health the Canadian facts*. Toronto: York University, School of Health Policy and Management].
- Mohren, D. C. ., Swaen, G. M. ., Kant, Ij., van Amelsvoort, L. G. P. ., Borm, P. J. ., & Galama, J. M. . (2003). Common infections and the role of burnout in a Dutch working population. *Journal of Psychosomatic Research*, 55(3), 201–208.
- Montgomery, A. J., Panagopolou, E., & Benos, A. (2006). Work–family interference as a mediator between job demands and job burnout among doctors. *Stress and Health*, 22(3), 203–212.
- Montgomery, A. J., Panagopolou, E., Wildt, M. de, & Meenks, E. (2006). Work-family interference, emotional labor and burnout. *Journal of Managerial Psychology*, 21(1), 36–51. <http://doi.org/10.1108/02683940610643206>
- Muheim, F. (2013). Burnout: History of a Phenomenon. In S. Bährer-Kohler (Ed.), *Burnout for Experts* (pp. 37–46). Boston, MA: Springer US.
- National Union of Public and General Employees. (2013). *Life/work balance : key findings of the quality of women’s lives survey / National Union Research*. Nepean, Ontario: National Union of Public and General Employees.
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work–family conflict and family–work conflict scales. *Journal of Applied Psychology*, 81(4), 400.

- Nitzsche, A., Pfaff, H., Jung, J., & Driller, E. (2013). Work–Life Balance Culture, Work–Home Interaction, and Emotional Exhaustion: A Structural Equation Modeling Approach. *Journal of Occupational and Environmental Medicine, 55*(1), 67–73.
- Nuallaong, W. (2013). Burnout Symptoms and Cycles of Burnout: The Comparison with Psychiatric Disorders and Aspects of Approaches. In S. Bährer-Kohler (Ed.), *Burnout for Experts* (pp. 47–72). Boston, MA: Springer US.
- Occupational Health Clinics for Ontario Workers. (2013, August). Action on Workplace Stress: Mental Injury Prevention Tools for Ontario Workers. PART 3 - What Are Other Jurisdictions Doing? Retrieved from <http://www.ohcow.on.ca/uploads/MIT/pdf/MIT%20tool%20Part%203%20revised.pdf>
- Oeij, P. R. A., Dhondt, S., & Wiezer, N. M. (2006). Conditions for Low Stress-risk Jobs: Europe’s Case. *European Journal of Social Quality, 6*(2), 81–108.
- Oudyk, J. (2012, September 25). Background on the development of the MIT survey tool. Retrieved from http://www.ohcow.on.ca/uploads/mit/pdf/MITSurveyTool_Background.pdf
- Oudyk, J., & Lacoste, R. (2012, October). *Identifying and Preventing Psychosocial Hazards*. Presented at the October 10, 2012, Launch: Action on Workplace Stress: Mental Injury Prevention Tools for Ontario Workers. Retrieved from http://www.ohcow.on.ca/uploads/mit/pdf/MIT_JohnOudyk.pdf
- Peeters, M. C. W., Montgomery, A. J., Bakker, A. B., & Schaufeli, W. B. (2005). Balancing Work and Home: How Job and Home Demands Are Related to Burnout. *International Journal of Stress Management, 12*(1), 43–61.

- Pejtersen, J. H., & Kristensen, T. S. (2009). The development of the psychosocial work environment in Denmark from 1997 to 2005. *Scandinavian Journal of Work, Environment & Health, 35*(4), 284–293.
- Pejtersen, J. H., Kristensen, T. S., Borg, V., & Bjorner, J. B. (2010). The second version of the Copenhagen Psychosocial Questionnaire. *Scandinavian Journal of Public Health, 38*(3 Suppl), 8–24.
- Peterson, U., Bergström, G., Demerouti, E., Gustavsson, P., \AAsberg, M., & Nygren, \AAke. (2011). Burnout levels and self-rated health prospectively predict future long-term sickness absence: a study among female health professionals. *Journal of Occupational and Environmental Medicine, 53*(7), 788–793.
- Pikhart, H., Bobak, M., Siegrist, J., Pajak, A., Rywik, S., Kyshegyi, J., ... Marmot, M. (2001). Psychosocial work characteristics and self rated health in four post-communist countries. *Journal of Epidemiology and Community Health, 55*(9), 624–630.
- Purvanova, R. K., & Muros, J. P. (2010). Gender differences in burnout: A meta-analysis. *Journal of Vocational Behavior, 77*(2), 168–185. <http://doi.org/10.1016/j.jvb.2010.04.006>
- Rantanen, J., Kinnunen, U., Mauno, S., & Tillemann, K. (2011). Introducing Theoretical Approaches to Work-Life Balance and Testing a New Typology Among Professionals. In S. Kaiser, M. J. Ringlstetter, D. R. Eikhof, & M. Pina e Cunha (Eds.), *Creating Balance?* (pp. 27–46). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Richardsen, A. M., & Burke, R. J. (1995). Models of Burnout: Implications for Interventions. *International Journal of Stress Management, 2*(1), 31–43.
- Rick, J., Briner, R. B., & Daniels, K. (2001). *A critical review of psychosocial hazard measures*. Great Britain, Health and Safety Executive.

- Roth, M., Morrone, K., Moody, K., Kim, M., Wang, D., Moadel, A., & Levy, A. (2011). Career burnout among pediatric oncologists. *Pediatric Blood & Cancer*, *57*(7), 1168–1173.
- Ruotsalainen, J. H., Verbeek, J. H., Mariné, A., & Serra, C. (2014). Preventing occupational stress in healthcare workers. *The Cochrane Library*. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD002892.pub4/full>
- Schaufeli, W. B., & Greenglass, E. R. (2001). Introduction to special issue on burnout and health. *Psychology & Health*, *16*(5), 501–510.
- Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International*, *14*(3), 204–220.
- Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, Burnout, and Work Engagement: Three of a Kind or Three Different Kinds of Employee Well-being? *Applied Psychology*, *57*(2), 173–203.
- Schwarzer, R., Schmitz, G. S., & Tang, C. (2000). Teacher Burnout in Hong Kong and Germany: A Cross-Cultural Validation of the Maslach Burnout Inventory. *Anxiety, Stress & Coping*, *13*(3), 309–326.
- Shields, M., & Shooshtari, S. (2001). Determinants of self-perceived health. *Health Reports*, *13*(1).
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, *1*(1), 27.
- Statistics Canada. (2010). *Healthy People, Healthy Places* (No. 82-229-X). Retrieved from <http://www.statcan.gc.ca/pub/82-229-x/82-229-x2009001-eng.htm>
- Turcotte, M. (2011). *Women and Health* (No. --X). Statistics Canada. Retrieved from <http://www.statcan.gc.ca/pub/89-503-x/2010001/article/11543-eng.pdf>

- Turnipseed, D. L., & Turnipseed, P. H. (1997). A bi-cultural analysis of the cost of caring: nursing burnout in the United States and the Philippines. *Career Development International*, 2(4), 180–188.
- Walter, U., Plaumann, M., & Krugmann, C. (2013). Burnout Intervention. In S. Bährer-Kohler (Ed.), *Burnout for Experts* (pp. 223–246). Boston, MA: Springer US. Retrieved from <http://link.springer.com/10.1007/978-1-4614-4391-9>
- Weyers, S., Peter, R., Boggild, H., Jeppesen, H. J., & Siegrist, J. (2006). Psychosocial work stress is associated with poor self-rated health in Danish nurses: a test of the effort–reward imbalance model. *Scandinavian Journal of Caring Sciences*, 20(1), 26–34.
- Wilkinson, R. G., & Marmot, M. G. (Eds.). (2003). *Social Determinants of Health: The Solid Facts* (2nd ed.). World Health Organization.
- Winter, T., Roos, E., Rahkonen, O., Martikainen, P., & Lahelma, E. (2006). Work-family conflicts and self-rated health among middle-aged municipal employees in Finland. *International Journal of Behavioral Medicine*, 13(4), 276–285.
- World Health Organization. (1984). *Health promotion: a discussion document*. Copenhagen, Denmark. Retrieved from http://www.who.int/entity/healthpromotion/Milestones_Health_Promotion_05022010.pdf?ua=1
- Zedeck, S., & Mosier, K. L. (1990). Work in the family and employing organization. *American Psychologist*, 45(2), 240.

APPENDICES

APPENDIX 1 – REB Letter of Approval



Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE: 10/7/2014
PRINCIPAL INVESTIGATOR: FAUGHT, Brent - Health Sciences
FILE: 14-079 - FAUGHT
TYPE: Masters Thesis/Project STUDENT: Jenna Novess
SUPERVISOR: Brent Faught
TITLE: The role of work-life balance and burnout on self-rated health

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW Expiry Date: 10/30/2015

The Brock University Social Science Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 10/7/2014 to 10/30/2015.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 10/30/2015. Continued clearance is contingent on timely submission of reports.

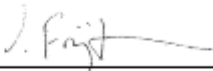
To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at <http://www.brocku.ca/research/policies-and-forms/research-forms>.

In addition, throughout your research, you must report promptly to the REB:

- a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
- c) New information that may adversely affect the safety of the participants or the conduct of the study;
- d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

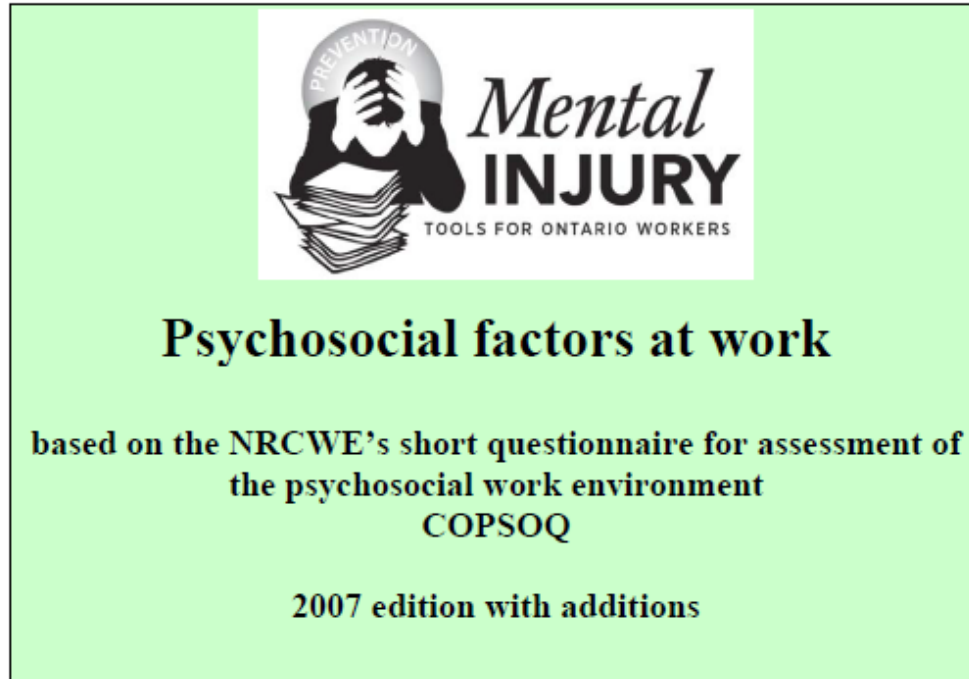


Jan Frijters, Chair
Social Science Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

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 clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

APPENDIX 2 – MENTAL INJURY TOOLKIT - Psychosocial factors at work based on the NRCWE's short questionnaire for assessment of the psychosocial work environment COPSOQ (2007 edition with additions)



Occupational Health
Clinics for Ontario
Workers Inc.



What economic sector do you work in?

- 1 Agriculture, Forestry, Fishing and Hunting
- 2 Mining and Oil and Gas Extraction
- 3 Utilities
- 4 Construction
- 5 Manufacturing (including food, textiles, clothing, paper, metal, machinery, etc)
- 6 Wholesale Trade
- 7 Retail Trade
- 8 Transportation and Warehousing
- 9 Information and Cultural Industries
- 10 Finance and Insurance
- 11 Real Estate and Rental and Leasing
- 12 Professional, Scientific and Technical Services
- 13 Management of Companies and Enterprises
- 14 Administrative and Support, Waste Management and Remediation Services
- 15 Educational Services
- 16 Health Care and Social Assistance
- 17 Arts, Entertainment and Recreation
- 18 Accommodation and Food Services
- 19 Other Services (except Public Administration)
- 20 Public Administration

What is the name of your workplace?

How many people are employed at this workplace?

- 1 less than 20 2 20-99 3 100-500 4 more than 500
-

How long have you worked here?

What is your job?

Do you have more than one job?

- 1 Yes
- 2 No
- 3 other: _____

Which of the following best describes the hours you usually work at your job?

- 1 Regular daytime schedule or shift
- 2 Regular evening shift
- 3 Regular night shift
- 4 Rotating shift (change from days to evenings to nights)
- 5 Split shift
- 6 On call
- 7 Irregular schedule
- 8 Other: _____

how long is your typical shift? _____ hours/shift

On average how many hours are you scheduled to work per week? _____ hours/week

On average how many hours do you actually work per week? _____ hours/week

To what extent do you agree that your workplace has enough resources to do the job the way it should be done?

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

To what extent do you agree that your job security is good?

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

What best describes your position at work? (check all that apply)

- 1 full time
 - 2 part time
 - 3 casual
 - 4 contract
 - 5 seasonal
 - 6 work for a temp agency
 - 7 other: _____
-

To what extent do you agree that staffing levels are adequate:

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

Are you: 1 Woman 2 Man

How old are you?

- 1 under 20 years old
 - 2 20-29 years old
 - 3 30-39 years old
 - 4 40-49 years old
 - 5 50-59 years old
 - 6 60 or more years old
-

To what extent would you agree that management at your workplace looks for causes, not guilty persons, when an accident occurs?

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

To what extent would you agree that fear of sanctions (negative consequences) from management at your workplace discourages workers from reporting near-miss accidents?

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

Does your workplace have a violence and harassment policy?

1 Yes 2 No 3 not sure

If Yes, to what extent would you agree that the policy is effective?

1 strongly agree 2 agree 3 neutral 4 disagree 5 strongly disagree

The following questions are about your physical work environment:

exposure	not applicable	well designed/controlled	present but not usually an issue/concern	exposures cause concern	exposures cause annoyance	exposures interfere with ability to get job done	describe concerns and possible solutions
Are there concerns about the way exposures to radiation are managed? (X-rays, ultra-violet, laser, electro-magnetic fields (EMF), radio-frequency (cell phones, wireless communication devices), antennae, WiFi, microwave)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are driving hazards managed? (traffic congestion, long commutes, bad weather conditions, mechanical breakdowns, parking lot security)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are biological hazards managed? (exposure to patients with infectious diseases, co-workers with colds/flu, lack of proper disinfection, presence of mould/water leaks)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are dangerous chemicals handled? (cleaning chemicals, toxic substances, drugs, spills)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are workstation(s) ergonomics designed/managed? (workstation design/layout, furniture, tools, lifting, pushing, pulling, aids)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are physical factors controlled? (noise, lighting)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well is thermal comfort controlled? (heat, cold, humidity, fluctuating temperatures)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well is the air quality controlled? (ventilation, air circulation, amount of fresh air, odours)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
How well are safety hazards dealt with? (slip/trip/fall hazards, guarding, railings, fire and explosion hazards)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

The following questions are about your psychosocial work environment. Please choose the answer that fits best to each of the questions.

always	often	some- times	seldom	never/ hardly ever
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1. Do you get behind with your work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
2. Do you have enough time for your work tasks?	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
3. Is it necessary to keep working at a high pace?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
4. Do you work at a high pace throughout the day?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
5. Does your work put you in emotionally disturbing situations?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
6. Do you have to relate to other people's personal problems as part of your work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
7. Do you have a large degree of influence concerning your work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
8. Can you influence the amount of work assigned to you?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0

to a very large extent	to a large extent	some- what	to a small extent	to a very small extent
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9. Do you have the possibility of learning new things through your work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
10. Does your work require you to take the initiative?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
11. Is your work meaningful?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
12. Do you feel that the work you do is important?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0

	to a very large extent	to a large extent	some-what	to a small extent	to a very small extent
13. Do you feel that your place of work is of great importance to you?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
14. Would you recommend a good friend to apply for a position at your workplace?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
15. At your place of work, are you informed well in advance about important decisions, changes, or plans for the future?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
16. Do you receive all the information you need in order to do your work well?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
17. Is your work recognised and appreciated by the management?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
18. Are you treated fairly at your workplace?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
19. Does your work have clear objectives?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
20. Do you know exactly what is expected of you at work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
21. To what extent would you say that your immediate superior gives high priority to job satisfaction?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
22. To what extent would you say that your immediate superior is good at work planning?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
	always	often	sometimes	seldom	never/hardly ever
23. How often is your nearest superior willing to listen to your problems at work?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
24. How often do you get help and support from your nearest superior?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0

very satisfied	satisfied	un-satisfied	very un-satisfied
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25. Regarding your work in general. How pleased are you with your job as a whole, everything taken into consideration?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	2	1	0

The next two questions are about the way your work affects your private life and family life.

Yes, certainly	Yes, to a certain degree	Yes, but only very little	No, not at all
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26. Do you feel that your work drains so much of your energy that it has a negative effect on your private life?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	2	1	0

27. Do you feel that your work takes so much of your time that it has a negative effect on your private life?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	2	1	0

The next four questions are not about your own job but about *the whole company* you work at.

to a very large extent	to a large extent	some-what	to a small extent	to a very small extent
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28. Can you trust the information that comes from the management?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	3	2	1	0

29. Does the management trust the employees to do their work well?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	3	2	1	0

30. Are conflicts resolved in a fair way?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	3	2	1	0

31. Is the work distributed fairly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	3	2	1	0

The following questions are about your *own* health and well-being. Please do not try to distinguish between symptoms that are caused by work and symptoms that are due to other causes. The task is to describe how you are in general.

The questions are about your health and well-being during the last four weeks:

Excellent	Very Good	Good	Fair	Poor
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32. In general, would you say your health is: 4 3 2 1 0

all the time	a large part of the time	part of the time	a small part of the time	not at all
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33. How often have you felt worn out? 4 3 2 1 0

34. How often have you been emotionally exhausted? 4 3 2 1 0

35. How often have you been stressed? 4 3 2 1 0

36. How often have you been irritable? 4 3 2 1 0

37. How often have you slept badly and restlessly? 4 3 2 1 0

38. How often have you found it hard to go to sleep? 4 3 2 1 0

39. How often have you been physically exhausted? 4 3 2 1 0

40. How often have you woken up too early and not been able to get back to sleep? 4 3 2 1 0

41. How often have you felt tired? 4 3 2 1 0

42. How often have you woken up several times and found it difficult to get back to sleep? 4 3 2 1 0

43. How often have you had a headache? 4 3 2 1 0

	all the time	a large part of the time	part of the time	a small part of the time	not at all
44. How often have you had a stomach ache?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
45. How often have you had problems relaxing?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
46. How often have you had problems concentrating?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
47. How often have you found it difficult to think clearly?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
48. How often have you been tense?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
49. How often have you had difficulty in making decisions?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
50. How often have you had palpitations?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
51. How often have you had difficulty with remembering?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
52. How often have you had tension in various muscles?	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0

Conflicts and offensive behaviours

	Yes, daily	Yes, weekly	Yes, monthly	Yes, a few times	No
53. Have you been exposed to undesired sexual attention at your workplace during the last 12 months?	<input type="checkbox"/> ₄	<input type="checkbox"/> ₃	<input type="checkbox"/> ₂	<input type="checkbox"/> ₁	<input type="checkbox"/> ₀

Colleagues	Manager/superior	Subordinates	Clients/customers/patients
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If yes, from whom? (You may tick off more than one)

	Yes, daily	Yes, weekly	Yes, monthly	Yes, a few times	No
54. Have you been exposed to threats of violence at your workplace during the last 12 months?	<input type="checkbox"/> ₄	<input type="checkbox"/> ₃	<input type="checkbox"/> ₂	<input type="checkbox"/> ₁	<input type="checkbox"/> ₀
	Colleagues	Manager/superior	Subordinates	Clients/customers/patients	
If yes, from whom? (You may tick off more than one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Yes, daily	Yes, weekly	Yes, monthly	Yes, a few times	No
55. Have you been exposed to physical violence at your workplace during the last 12 months?	<input type="checkbox"/> ₄	<input type="checkbox"/> ₃	<input type="checkbox"/> ₂	<input type="checkbox"/> ₁	<input type="checkbox"/> ₀
	Colleagues	Manager/superior	Subordinates	Clients/customers/patients	
If yes, from whom? (You may tick off more than one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Bullying means that a person repeatedly is exposed to unpleasant or degrading treatment, and that the person finds it difficult to defend himself or herself against it.

	Yes, daily	Yes, weekly	Yes, monthly	Yes, a few times	No
56. Have you been exposed to bullying at your workplace during the last 12 months?	<input type="checkbox"/> ₄	<input type="checkbox"/> ₃	<input type="checkbox"/> ₂	<input type="checkbox"/> ₁	<input type="checkbox"/> ₀
	Colleagues	Manager/superior	Subordinates	Clients/customers/patients	
If yes, from whom? (You may tick off more than one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

	Yes, daily	Yes, weekly	Yes, monthly	Yes, a few times	No
57. Have you been exposed to discrimination at your workplace during the last 12 months?	<input type="checkbox"/> ₄	<input type="checkbox"/> ₃	<input type="checkbox"/> ₂	<input type="checkbox"/> ₁	<input type="checkbox"/> ₀
	Colleagues	Manager/superior	Subordinates	Clients/customers/patients	
If yes, from whom? (You may tick off more than one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If yes, what type of discrimination was it? _____					

