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Exploring the Content Validity of the Workplace Mental Health Risk Assessment

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ABSTRACT

Mental illness is currently the leading cause for disability claims in Canadian organizations. A Workplace Mental Health Risk Assessment (WMHRA) was developed to facilitate primary prevention initiatives. This thesis explored the content validity of the items generated for this assessment. Two rounds of the Delphi method were utilized to gain consensus from various experts regarding the importance of items. Experts included workers, human resource personnel, supervisors, occupational therapists and physicians. Consensus was achieved on 18 items to be maintained and 10 were eliminated, and rewording was required for 23 items. Therefore, at this stage of the development process, the WMHRA includes 36 items. The WMHRA aims to assist organizations with the crucial shift from reaction to prevention of mental illness in the workplace.

Key words: mental health, work, risk assessment

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CHAPTER ONE

1.1 Introduction

The prevalence of mental illness in the workplace has grown to such a great extent that within Canada it has become one of the premier concerns faced by organizations (Wilson, 2004). Billions of dollars are lost each year through absenteeism and reduced employee efficiency (Dewa, Lesage, Goering & Caveen, 2004). Despite this financial and emotional burden on society, few organizations have a plan for how to better manage this critical concern.

1.2 Background

Mental disorders affect men and women in their prime working years and cost the Canadian economy an estimated 33 billion dollars a year in lost productivity (Dewa et. al., 2004). This estimate reflects only the losses associated with absenteeism from work. Losses in productivity also occur through presenteeism; when one remains working when ill and is ineffective at performing their responsibilities (Sanderson & Andrews, 2006). In Canada, mental illness is presently the leading cause of short-term disability claims in Canadian organizations (Dewa, et al., 2004; Watson Wyatt Worldwide, 2007). These sources estimate that mental illness is responsible for 76% of short-term disability claims and 70% of long-term disability claims. Anxiety and depression are the most prevalent mental disorders experienced in the working population in Canada (Dewa et al., 2004; Haslam, Atkinson, Brown & Haslam, 2005; Sanderson & Andrews, 2006). The World Health Organization (1996) predicts that by the year 2020 depression will become the second highest cause of disability globally second only to heart disease. When predicting the long-term cost of mental illness, it is important to understand that an illness such as

depression is recurrent; therefore many people experience subsequent bouts after their initial diagnosis (Bonde, 2008).

Research findings indicate that although there are many people struggling with mental health concerns, many do not seek treatment and continue to work (Dewa et. al., 2004). Service (2004) states that approximately 20% of the Canadian population will experience mental health concerns during their lifetime; however, less than 50% of those people are likely to consult a health care professional. Myette (2008) reported that on average, those with mood disorders such as depression wait nearly ten years before seeking treatment. However, it is recognized that early treatment of mental illness is essential for positive outcomes related to work and health (Glozier, 1998). Putnam and McKibbin (2004) stated that costs associated with depression are actually higher prior to diagnosis and treatment due to excessive visits to physicians regarding associated physical ailments as well as the cost of presenteeism.

Once a person does leave work for mental health reasons, it seems to be extremely difficult to get them back to work successfully. Dong, Doupe, Ross, Gardiner & Mendel (2002) found that after being off work for six months, only 50% of people return successfully. After being off work for one year, only 20% return, and after being off for two years, only 10% are able to return successfully. Although there are increased numbers of health professionals and programs addressing the return to work needs of people with mental health issues, as the above findings indicate, waiting until someone has gone off work with a mental illness is too late to begin the intervention process (Dong et. al., 2002). A shift in focus from reaction to the prevention of mental illness in the

workplace is essential (LaMontagnes, Kegel, Louie, Ostry, & Landsbergis, 2007; Parent, 2004).

1.2.1 Rationale for primary prevention

A greater focus needs to be placed on primary prevention to begin to address the growing prevalence and impact of mental illness in the workplace (Kompier, 2004; LaMontagnes et al., 2007; Myette, 2008; Parent, 2004; Putnam & McKibbin 2004; Sanderson & Andrews 2006). When discussing intervention strategies in this thesis, they will refer to definitions linked specifically to mental illness in the workplace rather than to disease prevention in general. Disease prevention defines primary prevention as occurring prior to the onset or recognition of an illness (Gordan, 1983). Primary prevention of mental illness in the workplace is defined as employing strategies that target reducing or eliminating work-related sources of stress (Parent, 2004; Vezina, Bourbounnais, Brisson, & Trudel, 2004).

Disease prevention defines secondary intervention strategies as those which occur after the disease has been recognized but before any suffering or disability has occurred (Gordon, 1983). Organizations traditionally manage workplace mental health concerns through utilizing secondary prevention strategies which are defined as those that focus on improving the coping skills of individual employees (Kompier, 2004; Parent, 2004).

Tertiary intervention strategies are discussed in disease prevention literature as occurring after suffering or disability is experienced in an effort to prevent further deterioration (Gordon, 1983). Organizations commonly employ tertiary intervention which in the context of mental illness in the workplace are defined as strategies addressing the needs of an employee who is identified as struggling with mental illness

and who may have already left work due to illness (Parent, 2004). The latter two strategies fall short in that they only address individual issues rather than workplace issues and therefore tend to have only a short-term positive impact (LaMontagnes et al., 2007; Parent, 2004).

The rationale for efforts to be placed on primary prevention of mental illness in the workplace is strong. To begin with, a great deal of research has explored the psychosocial risk factors that contribute to mental illness. Many authors are clear about the detrimental effects of the workplace on an employee's mental health (Kompier, 2004; Parent, 2004; Putnam & McKibbin, 2004; Sanderson & Andrews, 2006; Vezina et al., 2004). One study within Canada found that 49% of employees believed that their major health problems were a result of their job (Parent, 2004). Focus needs to be placed on addressing workplace factors that contribute to mental illness as these are the issues that are paramount for improving occupational wellness and they may be more easily prevented and avoided than stressors related to personal life events (Bonde, 2008; Kompier, 2004).

The rationale for primary prevention is further strengthened by the changing trends of today's workforce. The current trend is that people are spending more time at work than in previous generations as our society is busy trying to keep up with the global economy (Faragher, Cooper & Cartwright, 2004). When one develops depression or anxiety, it is common for one to withdraw from family and friends (American Psychiatric Association, 1994). With greater hours in the workplace and fewer hours at home or with loved ones, work is the obvious place where others have the opportunity to observe illness symptoms.

To facilitate any reduction of mental illness in the workplace, it is believed that some of the responsibility rests on workplace managers and supervisors to address this growing

concern (Dewa et al., 2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999). Supervisors and managers are in key positions to be part of this primary prevention given that they often have the most contact with employees. A common concern, however, is that managers and supervisors often lack knowledge about mental illness, the signs and symptoms, as well as how to approach the issue with an employee (Putnam & McKibbin, 2004). Through education and the availability of helpful tools to identify mental health risk in the workplace, managers and supervisors may partake in a crucial role of changing the face of mental illness at work (Dewa et al., 2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999). Schott (1999) stated that in this new century, it is time for this "issue to emerge from the dark ages of organizational practice" (p. 175) through creating a workplace culture where mental health concerns are recognized and addressed appropriately.

Others such as Vezina and colleagues (2004) suggest that every employer has a duty to ensure the health and safety of their workers in all aspects related to work. This duty seems to be well addressed in the realm of physical injuries. However, in terms of mental health concerns; organizations have difficulty with primary prevention as they struggle with identifying and managing risks (Vezina et al., 2004). Organizations tend to focus on managing individuals' needs as this strategy seems more comfortable and may appear on the surface to involve less cost (Kompier, 2004); however, this strategy was found not to be very effective (LaMontagnes et al, 2000; Parent, 2004).

The need for primary prevention is also promoted in the field of occupational science. Pioneers in this field, Townsend and Wilcock (2004), posit that participation in occupation is the key determinant to health and well being. Wilcock (2006) suggested

that "doing being and becoming advisedly and wisely can assist with overcoming illness and disability" (Wilcock, 2006, p. 282). This occupational scientist goes on to introduce the concept of an occupational–focused preventive approach to illness and disability (2006). This concept demands a focus on prevention of disease through addressing risk factors identified in previous research efforts. Proposing this approach is in keeping with the World Health Organization's goal of creating "the absence of illness through preventative approaches based on known risks" (Wilcock, 2006, p. 282). Creating an environment that facilitates doing, being, belonging and becoming (Hammell, 2004) in a healthy way within one's paid occupation may go a long way towards preventing mental illness in the workplace.

Developing a workplace mental health risk assessment is clearly supported throughout the literature as many authors detail the need for such a tool to detect and prevent mental illness at work (Glozier, 1998; Haslam et al, 2005; Kompier, 2004; Myette, 2008; Parent, 2004; Service, 2004; Watson Wyatt Worldwide, 2007; Wilson, 2004). In a national Canadian study across 78 organizations, Watson Wyatt Worldwide (2007) found that although companies acknowledged that conducting risk assessments would be beneficial, only 15% of those surveyed were engaged in this initiative.

1.3 Personal Background

I am an occupational therapist whose practice focuses on the return to work needs of clients with mental health issues such as Depression, Anxiety, Post-Traumatic Stress Disorder and Eating Disorders. I routinely work with clients whose workplace experiences either directly led to the development of a mental illness or contributed to

their illness. Therefore, returning clients to such a problematic workplace or occupation brings forth many concerns.

In 2005 my husband was working as a consultant with a large international company that often conducted risk assessments. Typically these assessments would concern the financial risk, environmental risk or risk to reputation of various organizations. Several large companies approached my husband stating that they were noticing high rates of disability leaves due to mental illness. Company representatives asked whether or not a risk assessment could be performed for their company in terms of risk for mental illness. This service was not one that was provided by my husband's company; however it did lead to investigating the possibilities of such an assessment given this obvious need.

The initial concept of a Workplace Mental Health Risk Assessment (WMHRA) was borne out of conversations with my husband, with the two of us coming from complementary backgrounds; mental healthcare and risk assessment. The aim of this assessment is to facilitate primary prevention of mental illness in the workplace through detecting risk factors related to the most prevalent mental illnesses at work, anxiety and depression. When risks are identified, the WMHRA is designed to offer suggestions for an organization to implement in an effort to reduce the risk. For example, an occupation such as law enforcement may involve the risk factor of exposure to traumatic experiences. A mitigation strategy suggested for this risk is to offer debriefing following such exposure to reduce the emotional impact of the experience.

Literature demonstrates the obvious need for primary prevention of mental illness in the workplace, supporting the development of the WMHRA. The focus of this thesis was to explore the content validity of the items in the WMHRA. Mitigation suggestions are an

important feature of this assessment; however they were not examined during the research process of this thesis.

1.4 Summary of background information

In summary, there is an increasing prevalence of mental illness in the workplace resulting in substantial economic and emotional costs for both organizations and individuals. Factors within the workplace, identified through research, are known to contribute to mental illness. Presently, organizations are utilizing secondary and tertiary strategies to address the issue of mental illness in the workplace by focusing primarily on the individual. However, this review of the literature indicates there is a need to effect change, organizations need to take responsibility for engaging in primary prevention of mental illness in the workplace.

The following chapter will introduce the development process of the WMHRA. Information will be provided regarding the theoretical models and literature that guided the design of the tool. Numerous assessments currently in use will be critically reviewed to explore gaps that exist and how these gaps will be addressed within the design of the WMHRA.

CHAPTER TWO

This chapter will offer a definition of risk and risk factors from a perspective that is consistent with that of the author and developer of this tool. Clarity regarding these definitions is essential given that this paper is introducing and evaluating a tool aimed at detecting risk. A critical review of the literature and theoretical models that influenced the design of the Workplace Mental Health Risk Assessment (WMHRA) will be provided. Numerous assessment tools currently available will be critically appraised within this chapter to highlight the gaps and limitations for consideration when designing the WMHRA.

2.0 Defining risk

Early usage of the word risk described a concept that reflected the chance of experiencing both good and bad outcomes from a particular circumstance. This definition may still be accurate, for example; choices such as gambling or financial investment may lead to either positive or negative outcomes. However, in today's society, risk is primarily associated with negative connotations such as danger, harm or threat (Lupton, 1999). Throughout this paper, risk will be aligned with this negative implication and will be defined and discussed from a post-positivist perspective (Finlay, 2006). For instance, this view considers risk to be pre-existing in nature, and can be identified, measured and controlled for (Lupton, 1999). Given the context in which risk is being discussed (a risk assessment tool); this tool will only have value if it is efficacious in that it can measure what it intends. Therefore, it follows that risk must be viewed as an objective measurable entity and this perspective is used to discuss the development of this tool.

Risk is also considered within the realm of cognitive science and is defined as proportional to the expected losses that may be caused by an event and to the probability of this event occurring (Lupton, 1999). Overall, risk is increased with greater event likelihood and greater potential loss (Kaplan & Garrick, 1981). The ability to protect one against risk assumes that there is an ability to identify a threat or risk factor; acknowledgement of a serious consequence associated with this threat; belief that prevention can be effective; and belief that the gains from proactive interventions will outweigh costs (Lupton, 1999). Kaplan and Garrick (1981) state that risk is the result of a hazard (source of danger) divided by a safeguard. These authors suggest that although risk can never be equal to zero, through implementing safeguards, as simple as awareness, risk can be reduced. This supposition about risk reduction provides the underpinning upon which the WMHRA was designed.

Clarke and Cooper (2000) define a risk factor as the result of exposure multiplied by the potential negative consequences from that exposure. Within this paper the term risk factor is consistent with Clarke and Cooper's (2000) definition. However, it will focus on the parameters of psychosocial risk factors within the workplace. These factors are defined as those that impact one's psychological, social and physical well being in a negative way such as high job demands, lack of supervisor support, or workplace bullying (World Health Organization, 2009).

2.1.1 Risk Assessment

A risk assessment in the workplace is described by World Health Organization (2009) as "a systematic examination of work undertaken to consider what could cause injury or harm whether the hazards could be eliminated and if not what preventative or protective

measures are or should be in place to control the risks" (pg 19). The aim of conducting a risk assessment is to provide information, guidance and support towards risk reduction.

When considering a risk assessment aimed at mental health in the workplace, it is important to clarify what is considered risk and what will be the target of measurement. Differentiating between a psychosocial risk factor and source of stress is therefore essential as both are commonly measured and discussed as concerns related to mental health. Stress is a very commonly used term in today's society, especially in regards to the workplace. One definition of stress is that of any stimuli that is perceived as threatening, through an individual's cognitive appraisal, and evokes emotional reaction (Lobel & Dunkel-Schetter, 1990). Many assessment tools that will be evaluated in chapter three focus on assessing the stress present in the workplace. These tools consider the presence of a hazard along with the individual's perception of and ability to cope with the potential threat. This approach to workplace assessment is aligned with a more constructivist perspective (Finlay, 2006), viewing risk for mental illness as differing for each individual.

For the purpose of this paper and research study, mental health risks in the workplace will be discussed from the post-positivist perspective (Finlay, 2006). To be consistent with this view on risk measurement the term psychosocial risk factors will be utilized throughout this thesis rather than using the constructivist term "stress". An example of a risk factor that is consistent with this post-positivist perspective is; excessive performance demands with deadline pressures (Karasek, 1979). This factor is measurable and does not consider the employee's perception of the workplace demands. This perspective argues that the exposure to known hazards over time creates the risk that

one's mental health will be impacted in a negative way (Vezina et al., 2004). Development of the WMHRA was guided by this post-positivist perspective of risk measurement and it has also influenced the critical review of literature and assessment tools on the subject.

2.2 History of the tool development

The process of developing the WMHRA began by researching tools that are currently in use that assess at least one of the following areas: mental health, workplace stress, and/or workplace cognitive demands. A critical review will be offered of the most commonly utilized tools, outlining their history, purpose, strengths and limitations. This summary will be followed by an overview of the theories, models, and research that contributed to the content of the items in this assessment.

A number of strategies were used to search for evidence based tools related to assessing psychosocial risk factors in the workplace. A literature review was conducted using CINAHL, Google Scholar, Pub Med, and Scopus to identify currently cited tools used in practice or research. To cover the range of terms that might be used when describing such assessment tools, a number of synonyms were generated for key words (see Table 1).

Table 1

Synonyms used for literature search

Workplace	Mental health	Risk	Assessment
Work	Mental illness	Hazard	Tool
Job	Well being		Screen
Occupation	Mental wellness		
	Psychosocial Stress		

Additional tools were identified through an Ontario Society of Occupational Therapists (OSOT) teleconference in June 2006. This teleconference involved occupational therapists from across Ontario who worked in mental health and were interested in learning and sharing information about available assessments in the area of mental health and the workplace. A short presentation was offered by the facilitators followed by questions and feedback from participating therapists. A suggestion from this educational opportunity was that a document of current assessments be developed and provided to all participants.

More than 30 tools were identified through the literature search or through the OSOT document. Inclusion criteria for tools critically reviewed in this thesis were that the tool must focus on measuring mental health risk factors within at least one of the following domains; the person, workplace environment/ culture, or occupation. Tools were excluded if they were too general, such as the Canadian Occupational Performance Measure (COPM) (Law, Baptiste, Carswell- Opzoomer, McColl, Polatajko & Pollock, 1991) or the SF-36 Health Survey (Ware & Sherbourne, 1992); or if they focused too specifically on issues external to the focus of this study such as physical ailments or

assessing specific impairments such as the Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975).

Of the numerous tools identified, the following table offers a summary of the assessment tools that met inclusion criteria and will be critically reviewed:

Table 2

Critically reviewed tools

Tool name	Author and year designed	Tool purpose
Job Content Questionnaire (JCQ)	R. Karasek, 1979	Assess demands, decision latitude and supports at work
Occupational Stress Index (OSI)	K. Belkic, 2000	Identify stressors in the workplace along with personal coping.
Pressure Management Indicator (PMI)	S. Williams, 1996	Assesses the perception of an employee's workplace stress
Occupational Stress Inventory- revised (OSI-)R	S. Osipow, 1981	Assesses stress in occupational roles, personal strain and personal resources.
Job Stress Survey (JSS)	Speilberger & Vagg, 1992	Job stress, job pressure and organizational support
A Shortened Stress Evaluation Tool (ASSET)	E. Faragher, 2004	Levels of workplace stress
City of Toronto Behavioural/Cognitive Job Demands Analysis	Raybould, Hay & Rosenfeld, 1998	Examines cognitive abilities of client in comparison with demands of the job
Beck Depression Inventory-II (BDI-II)	A. Beck 1961	Diagnosis of depression
Beck Anxiety Inventory- II	A. Beck 1988	Diagnosis of Anxiety

2.3 Critical review of current tools

Each of the nine identified tools in Table 2 will be evaluated. This evaluation will include a general description of each tool followed by; description of purpose (e.g.

primary, secondary or tertiary prevention); theoretical perspective; use (e.g. research or clinical, organizational); targeted user; measurement focus (e.g. person, environment, occupation); critical evaluation of the evidence of the strengths and limitations of the tool relevant to evaluation of risks. Where available, the reliability of each tool will be provided by offering the Chronbach's alpha coefficient regarding internal consistency. Nunally and Berstein (1994) suggested that an alpha coefficient of .70 to 1.0 indicates an acceptable level of reliability. In addition, an indication will be provided regarding how frequently this tool is used for clinical or research purposes based on the number of hits within a literature search.

2.3.1 Job Content Questionnaire (JCQ)

The job strain model developed by a sociologist named Robert Karasek (1979) influenced the development of the American assessment, the JCQ. Two versions of the JCQ had been developed, the first in 1984 and an updated version was developed in 1997. The current version of the JCQ is a 49 item self-administered assessment that requires rating the validity of each statement about work on a 4 point scale. (Karasek, Brisson, Kawakami, Amick, Houtman & Bongers, 1998). Domains measured within this assessment are the following: decision latitude, psychological and physical demands, exposure to physical hazards, job satisfaction and security, and support (Karasek et.al. 1998). This tool has a post-positivist orientation (Finlay, 2006) as it assumes that one's behaviour and health outcome is a direct result of the impact from the environment and the external constraints placed upon an employee (Karasek et. al. 1998).

This workplace assessment tool was initially designed to investigate work related social and psychosocial factors that lead to cardiovascular illness (Karasek, 1979).

Psychology research commonly utilizes this assessment tool when exploring psychosocial risk factors in various organizations or jobs (Karasek, et. al. 1998). These authors also indicate that the JCQ can be utilized as a form of primary prevention within organizations to assist with the assessment of risk for mental strain within certain occupations (Karasek, et. al. 1998).

Translations of the JCQ are available in over a dozen languages. An occupational scoring system was created through the national standardization of detailed occupations in several countries (Karasek et al. 1998). For example, particular jobs are acknowledged as having high psychological strain, while others have been recognized as being "active" or healthy jobs with high demands and high control. This standardized identification serves as a source of comparison for the data from the JCQ. Validity and reliability are established for this tool through extensive research (Karasek et al., 1998). The overall average for the Chronbach's alpha coefficient is acceptable at .74. Only two of nine scales fell below .70 (Karasek et al., 1998). Literature searches using CINAHL and Scopus yielded 25 empirical studies that utilized the JCQ.

With high predictive validity of the scales within the JCQ it has become a very successful and widely used assessment in the workplace across many countries (Karasek et al., 1998). One limitation however is that the JCQ has a very narrow focus primarily on assessing job duties. Risk factors stemming from an unhealthy workplace culture/ environment or within the individual are explored within this tool to a very small degree. Despite identifying clear levels of psychosocial risk within an occupation, the JCQ does not provide suggestions for how to manage identified factors to reduce risk.

2.3.2 Occupational Stress Index (OSI)

In 2000 the OSI was created by Karen Belkic, a medical doctor and researcher from Sweden (Belkic & Savic, 2008). Belkic used an additive burden model to guide the development of this tool (Belkic & Savic, 2008). Belkic's research focus is mainly on the impact of occupational stress on the development of cancer and heart disease. Development of the OSI incorporated aspects of the job strain model (Karasek, 1979) and the effort-reward imbalance model (Siegrist, 1996). The focus of this assessment is to "identify the key modifiable stressors in a work environment" (Belkic & Savic, 2008, p. 169). Generic stressors are assessed using the general OSI format. Additional versions were created for specific jobs such as truck driving and teaching. Occupational stress, personal strain and personal coping resources are the domains explored by this assessment (Belkic & Savic, 2008). These authors state clearly that the OSI is interested in the demands on mental resources and how these are managed by the individual. This perspective of measurement represents a constructivist approach to assessing psychosocial risks in the workplace (Finlay, 2006).

Employees complete the OSI themselves by answering 65 questions that are a combination of multiple choice or open ended questions. The use of the OSI focuses on secondary prevention or tertiary intervention of psychosocial stressors in the workplace. Information gathered is used by physicians or clinicians to guide workplace management strategies or return to work guidelines for employees who are already struggling (Belkic & Savic, 2008). The general OSI provides a basic screening for any job. If problems are detected with the general version, there may be an option to compete the occupation

specific OSI to gather more detailed information of the stressors faced by an employee within an organization.

Validity was established with the OSI and tested on many subjects and across many countries (Belkic & Savic, 2008). No published results were found regarding reliability testing of the OSI. Using CINAHL, Scopus and Google Scholar only two research articles were found that identified using the OSI in their methods. Limitations within the OSI begin with the fact that it was designed to address issues related to cancer and cardiovascular disease and did not involve any research into the impact of workplace psychosocial stressors on one's mental health. Within the 65 questions, the frequency or severity of problematic items are not taken into consideration within the scoring. The OSI is also somewhat lengthy and difficult to score. The scope of this tool is limited as the questions do not explore the impact of workplace culture on an individual. Lastly, although the tool aims to identify modifiable stressors within the workplace, no suggestions are offered in terms of healthy and helpful modifications to employ at work.

2.3.3 Pressure Management Indicator (PMI)

This instrument was created in the Netherlands by Stephen Williams, an organizational psychologist in 1996. The PMI was introduced as the new and improved version of the Occupational Stress Indicator created in 1988 (Cooper, Sloane & Willams, 1988). Development of this tool was guided by the transactional model of stress. This model describes stress as the result of sources of stress in combination with individual differences (Williams & Cooper, 1998). Therefore the focus is placed on the perception of stress by the individual rather than simply the existence of demands (Williams & Cooper, 1998). Given the definition of stress within this tool development, the PMI is

based on a constructivist perspective (Finlay, 2006) of measuring psychosocial risk in the workplace.

Initially the occupational stress indicator had the following six scales of measurement: pressure, type A personality, locus of control, coping, job satisfaction, mental and physical health (Evers, Frese & Cooper, 2000). Considerable research was conducted using the Occupational Stress Indicator, however, the reliability proved to be quite poor. Significant concerns existed within the scales of type A personality, locus of control and coping (Lyne, Barrett, Williams & Coaley, 2000; Williams & Cooper, 1998). Additionally, many of the subscales were deemed to be confounded and overlapping (Lyne et al., 2000). Major revisions were made through comprehensive research regarding the items included within the tool. A name change occurred as many organizations offered feedback that the name of the tool implied that stress did exist giving it a negative connotation (Williams & Cooper, 1998).

The current version of the PMI includes three scales; stress outcome, stressors, and moderator variables (Williams & Cooper, 1998). Answers are scored on a 6 point Likert scale for 145 questions. Fifteen demographic questions are also a requirement of completing this tool. These authors report that greater reliability was established for the new shortened tool, however, validity is still in need of support through further research. All scales within the PMI, except one, met or exceeded the acceptable level for internal consistency with alpha coefficients ranging from 7.0 to .89. Only the scale related to daily hassles was below acceptable limits scoring at .64. Using a variety of literature review search engines, only 2 research articles were found that utilized the PMI. Loh (2004) indicated that through his study in Malaysia, the PMI demonstrated reliability and

validity. Translation into a variety of languages has allowed for many nations around the world to utilize this tool (Lyne et al., 2000).

The PMI may be beneficial for early detection of stress within the workplace at an organizational level, work group level and individual level. The aim is to identify those who are struggling with stress to identify the areas in which they need to improve. A PMI personal profile is generated for each employee who completes this assessment and it is posited that this report will encourage individual and group interventions (Williams & Cooper, 1998).

Given that this tool is designed to assess stress, as defined by the transactional model of stress, the tool naturally focuses more heavily on factors related to the worker and their perception of the workplace. Lyne et al. (2000) argue that stress is a difficult concept to measure and they question the ability of this tool to operationalize this concept. Despite the suggestion that results from this assessment tool may guide interventions, suggestions for change are vague and offer no specific ideas of how to operationalize the change. For example, within the summary of a sample individual profile it is suggested that an employee may benefit from being less emotional and more objective.

2.3.4 Occupational Stress Inventory- Revised (OSI-R)

The OSI-R was created in 1981 by an American psychologist named Samuel Osipow. Development of this tool was influenced by the model of person-environment fit (Osipow, 1998). Within this model, stress is defined as arising from the poor fit of an individual within one's environment. Therefore workplace stress occurs through the presence of a factor at work that evokes a negative physical, psychological or behavioural response from an employee (Osipow, 1998). Given this belief of how workplace stress is

to be measured as a response from the employee, the OSI-R is a tool that is underscored by a constructivist perspective (Finlay, 2006).

This assessment tool measures occupational stress across three domains: occupational roles; personal strain; and personal resources. Occupational role questions investigate issues such as role overload and insufficiency, role ambiguity and responsibilities. Personal strain questions probe various sources of strain both at work and at home such as vocational, psychological, interpersonal and physical strain. Lastly, personal resources questions examine an individual's participation in healthy/replenishing activities such as recreation, self-care, connecting with social supports and utilizing cognitive coping strategies. The OSI-R contains 140 items and takes approximately 30 minutes to complete. Items are comprised of statements related to each domain and require an employee to answer how true this statement is for him/her on a five point Likert scale.

Normative data is available for the OSI-R for each gender along with data from six different occupational groups; executives, professionals, technicians, administrative support, public service/safety, and agriculture/production/labourers. The original version of the occupational stress inventory was developed in 1981, however through research into the reliability and validity of the tool; several changes were made within the items leading to the present format of the OSI-R. Reliability was established for all three domains with the following alpha coeffients: occupational roles .88; personal strain .93; and personal resources .89. (Osipow, 1998). From information provided within the OSI-R manual along with a literature search using CINAHL, Google Scholar and Scopus, 39 research studies were identified that utilized the OSI-R within their methods.

Osipow (1998) suggested that the OSI-R has several different applications involving both secondary prevention and tertiary intervention. Clinicians may use this tool to screen employees who are showing obvious signs of workplace mental strain. Information gained from an OSI is also beneficial for use within general counseling and career counseling interventions. Lastly, organizations can utilize this tool to assess problematic work units or as an outcome measure following any implemented interventions within the workplace (Osipow, 1998).

Limitations of the OSI-R begin with the lengthy scoring process as it involves translating raw scores into T-scores and plotting them on a graph, which is time consuming. The OSI-R is comprehensive in that is does explore factors within critical domains such as the person, environment/ culture, and occupation. However, this is a self- report assessment which is heavily focused on the individual employee's perspective of the workplace and their ability to cope within it. Thus, this assessment would not be appropriate for others in the workplace to conduct e.g. supervisors or human resource personnel. The self-report format may reduce the potential to serve as a tool for primary prevention given that people tend to deny and minimize their mental health issues (Dewa et. al., 2004; Service, 2004). Lastly, although information gained through the OSI-R may be used by organizations and clinicians to create change, this tool does not offer any suggestions of what interventions may be helpful based on the findings.

2.3.5 Job Stress Survey (JSS)

The JSS was created in 1992 by two psychologists Spielberger and Vagg (1999) and is used within the workplace to measure general sources of stress in varied settings. Karask's model of job strain influenced the development of the JSS with the consistent

belief that there are specific occupational risk factors that can be measured and do impact the psychosocial well being of employees (Spielberger & Vagg, 1999). This belief is consistent with a post-positivist approach to measuring psychosocial risk factors in the workplace (Finlay, 2006). The aim of this tool is to guide organizations with making changes in the work environment that will reduce stress and increase productivity given the identification of major workplace stressors (Spielberger &Vagg, 1999). Thus the focus of this tool is primary prevention.

Three scales and six subscales make up this assessment tool. Job stress, job pressure and lack of organizational support are measured in terms of both the frequency and severity at which they are experienced in the workplace. This variation of examining the frequency and intensity of stress factors is a unique and positive addition to this tool that the creator felt was an essential difference from the JCQ (Spielberger & Vagg, 1999). Employees answer a 30 item questionnaire using a nine point Likert scale. Each item is rated once for level of intensity and once for the frequency experienced, thus the total assessment consists of 60 items. No literature was found that offered further updates to the tool since its development in 1992.

Normative data were established for the JSS based on adults from business, industry, university students and military. Norms for both genders are available. Research suggested that all three scales met acceptable levels of reliability with a Chronbach's alpha coefficient of .89 (Spielberger & Vagg, 1999). Through CINAHL and Scopus literature searches, only eight research studies were located that utilized the JSS.

A limitation of this assessment is that it is a self-report tool which Razavi (2001) suggested may have diminished validity. This author further elaborated on the limitations

of the answers in a self-report tool that are often influenced in two ways: response style and response set. Response style reflects a bias for an individual to answer questions in a certain direction regardless of the content of the item. Response set refers to answering questions with the conscious or unconscious attempt to create a particular impression (Razavi, 2001). This author also indicated that an individual's response to test items may be influenced by the following variables: psychological, sociological, linguistic, experiential, and contextual. Given that this is a tool consistent with the post-positivist perspective of measurement, using self-report as the only method of obtaining data may weaken the validity of the results (Razavi, 2001).

The JSS focuses on stress related to the duties of a job, and to some extent, the workplace culture. However, individual employee risk factors are not taken into consideration through this assessment. Scoring of the JSS is also somewhat complicated and may impact accuracy and willingness to complete such a tool. In addition, the JSS lacks any practical suggestions for how to manage any measured stress within a workplace.

2.3.6 ASSET (A shortened stress evaluation tool)

The ASSET tool was developed by psychologists in the United Kingdom (UK) in 2003 in response to complaints from organizations that previously available tools to measure stress were too long, complicated and geared towards white collar workers. The established stress model (discussed above in relation to the PMI) influenced the development of an ASSET model which in turn guided the development of this tool (Faragher et al., 2004). As identified with the PMI, measuring psychosocial stressors

based on the individual's perception of stress is consistent with a constructivist perspective of measurement.

Adaptations of the stress model were made including viewing certain factors such as job satisfaction, or organizational commitment as being sources of stress rather than outcomes of stress. The ASSET is promoted as a quick screen that assesses risk within three areas; employees' perception of their job, attitudes towards organization and employee health (Faragher et al., 2004).

The ASSET offers an opportunity for primary or secondary prevention as workers themselves complete this tool. Completion takes 10-15 minutes and involves answering 12 questions using a six point Likert scale. This brief tool is meant to serve as a method of screening for any concerns regarding the level of stress experienced in the workplace (Faragher et al., 2004). If significant levels of stress are indicated within any of the scales, it is then recommended by tool developers that the organization assess the sources of stress further using more sensitive and comprehensive tools such as the Occupational Stress Indicator (Faragher et al., 2004). Research was conducted in a variety of public and private organizations in the UK and suggested that the psychometric properties of the ASSET tool are sound (Faragher et al., 2004). Reliability testing of the 12 factors achieved a range of alpha coefficients from .602 to .929. Two of the 12 factors were below the .70 score of acceptable internal consistency.

The brevity of the ASSET is a strength of this tool and also a weakness. Concerns may be quickly identified through using the ASSET; however, for any detailed assessments or recommendations to be offered, a subsequent more lengthy assessment needs to be conducted. Organizations struggle with addressing this issue of stressors in the workplace

as discussed in the introduction of this paper. Therefore, it is essential that tools offered to assess risk are both comprehensive and simple to implement to reduce the steps required to create change. All three areas concerned with the workplace are considered in the ASSET i.e. the person, occupation and the workplace environment/culture; however, with so few questions related to each, many critical risk factors are left unexamined. Only one article was found when conducting a literature search of research studies that utilized the ASSET within their methods. Thus, there is limited published evidence on the use of this tool in prevention of risk.

2.3.7 City of Toronto Behavioural/Cognitive Job Demands Analysis

Within Canada, the City of Toronto Behavioural Cognitive Job Demands Analysis was developed by ergonomists Raybould, Hay and Rosenfeld in 1998 (Raybould, McIlwan, Hardy, & Byers, 2001). Tertiary intervention is the purpose of this tool as it aims to assess the cognitive demands within a particular job and to compare this to the functional abilities of a worker wanting to enter back into that job. When comparing the two, any mismatches indicate potential difficulties for an employee to successfully perform that job, as currently outlined. For instance, if a job requires a high level of memory and concentration, however an employee is not currently able to maintain these skills for an extended period of time, performing that job may not be possible as is.

Development of this tool was guided by previously existing job demands analysis tools for the physical requirements of a job (Raybould et al., 2001). A post-positivist perspective (Finlay, 2006) influenced the job demands analysis portion of this tool as each job is reduced down into very concrete measurable entities. However, the other portion of this tool requires measuring the functional abilities of employees from the

perspective of the employee themselves or a clinician. Therefore, given this more individualistic approach to overall scoring, the use of the entire assessment tool would be consistent with multiple perspectives underscoring a constructivist perspective (Finlay, 2006).

To use this tool effectively, it may be filled out by several different people involved in the workplace. Fifteen items are scored using a four point ordinal scale with definitions for each rating indicated within the tool. Areas assessed include factors within the duties of the job and the workplace environment. The job demands portion may be filled out by both the employee and the supervisor, while the functional abilities component may be filled out by a physician or therapist along with the employee.

This cognitive job demands analysis tool provides an excellent framework for job site analysis to assist with accurate assessment of one's readiness to return to work and identification of necessary accommodations. However, it is not a tool designed for primary prevention. Research regarding the internal consistency of this assessment indicated an acceptable alpha coefficient of .90. However, research into inter-rater reliability identified additional limitations of this job demands analysis due to the subjective nature of interpreting the demands of various jobs (Lysaght, Shaw, Almas, Jogia, & Larmour-Trode, 2008). These authors suggested that reliability is reduced with lack of clinical experience, lack of familiarity with the tool and lack of clarity with the item definitions. A literature search using Google Scholar, Scopus and CINAHL yielded only the one research article mentioned above that utilized this assessment. A final limitation of this tool is that it does not consider the workplace culture and how this may impact on an individual returning to work.

2.3.8 Beck Depression Inventory (BDI-II)

Depression is most commonly measured and assessed using the Beck Depression Inventory-II. (Beck, Steer & Brown, 1996). This tool was created by a psychiatrist, Dr. Aaron Beck in 1961 and was revised twice since then in 1971 and 1996. Cognitive theory guided the development of this tool as Beck believed that one's cognitive interpretation of their experience influences their feelings of depression (Beck et. al., 1996). Items chosen for the BDI-II were also consistent with the Diagnostic and Statistical Manual IV (DSM IV) (American Psychiatric Association, 1994) diagnosis of depression. This inventory was developed from a post-positivist perspective (Finlay, 2006) as it is guided by the belief that depression is a tangible element that can be measured in a consistent manner across people and places.

The current version of the BDI-II is a quick 21 item self report assessment that involves rating each item on an ordinal scale from zero to three. Patients' verbatim descriptions of their depression symptoms were included as descriptors under each item within the BDI-II. Research regarding the reliability of the BDI-II was presented across 25 different studies (Beck, Epstein, Brown, & Steer, 1988; Beck, Steer, & Garbin, 1988). The Chronbach's alpha coefficient achieved acceptable levels with a range from .76 to .95 and a mean of .86. Literature searches using CINAHL, Google Scholar and Scopus yielded over 500 articles that utilized the BDI.

Use of the BDI-II is purely for assessment/diagnosis purposes when a person has already voiced concerns. This tool was intended to be administered by clinicians, however it is often completed by the individual and is based on self-report. The results of the BDI are assessed by a physician or mental health care professional to guide tertiary

interventions (Beck et. al., 1988). Within the workplace occupational physicians or occupational health nurses may use this tool to clarify any concerns with an employee in terms of depression symptomotology.

This is an effective tool for diagnosing depression; however, given the need to focus on the primary prevention of mental illness in the workplace, the scope of the BDI-II is limited. Additionally, this tool does not explore any occupation or workplace culture concerns that may contribute to someone developing depression. Individuals who score high on the BDI-II may be given a diagnosis of depression; however this assessment tool in itself does not offer any strategies for managing this illness in general or in the workplace. Lastly, this tool is self-report and is therefore vulnerable to exaggerated or minimized responses from the individual completing the form (Razavi, 2001).

2.3.9 Beck Anxiety Inventory (BAI)

This assessment tool was developed by psychiatrist Dr. Aaron Beck in 1988 through amalgamating previous tools; the anxiety checklist, physicians' desk reference checklist; and the situational anxiety checklist (Beck, Epstein, Brown & Steer, 1988). All items relate to the individual and focus on both physical and emotional symptoms of anxiety, such as feeling shaky, faint, nervous, or terrified, all of which are consistent with the DSM IV (American Psychiatric Association, 1994). As identified with the BDI-II, this assessment is guided by a post-positivist (Finlay, 2006) perspective of measurement. Anxiety is viewed as an entity that can be accurately measured in a consistent manner across people and places.

Items gathered from previous anxiety measures were narrowed done to a 21 item scale with strong reliability established with a Chronbach's alpha coefficient at .92 (Beck,

Epstein, Brown & Steer, 1988). All items are scored on a Likert scale from zero to three indicating levels of severity. Physicians or mental health professionals use this assessment as a guide to tertiary intervention. The BAI was created as an assessment tool to guide diagnosis and treatment.

The Beck Anxiety Inventory is an excellent measure for assessing an individual who may be currently struggling with symptoms of anxiety; however it is not designed as a preventive tool. Given that the nature of this tool is to focus on the individual, this assessment is also limited as a workplace risk assessment as it does not explore any workplace factors contributing to anxiety. Completion of the BAI is self-report which has a potential impact on the validity of the data gathered from this assessment (Razavi, 2001). The BDI does not offer any suggestions related to managing anxiety in general or within the workplace if resultant scores are high.

2.3.10 Summary of all tools critically appraised

Many tools currently in use measure a variety of factors related to mental health and the workplace such as workplace risks, workplace stressors and illness symptoms. Some tools were developed from a post-positivist perspective on measurement of risk. However, many tools such as the OSI , PMI, OSI-R, JSS, ASSET and City of Toronto Assessment were consistent with a constructivist perspective. These tools differed from the approach taken in this present study as they underscore that measurement of mental health risk factors within the workplace must consider the individual including their experience, supports and coping strategies. As stated earlier, within this study, risk is defined as an objective measurable entity that exists external to an individual.

The driving force behind creating a new tool within this study was to offer organizations and individuals an assessment that will target the primary prevention of mental illness in the workplace. Many of the tools reviewed were proven to be reliable and valid and useful for the purpose that they were designed, however only the JCQ, PMI, JSS and the ASSET are appropriate for use in primary prevention. Most tools begin assessing a workplace or individual after concerns are raised as a way to manage the situation through secondary prevention or tertiary intervention strategies. To address the growing prevalence of mental illness in the workplace, more research is needed to develop primary prevention tools and strategies.

Among the tools critically appraised the measurement of risk factors targeted one or more of the following areas: individual, occupation, workplace environment or workplace culture. For instance, an individual may demonstrate symptoms in the workplace that indicate a risk for developing mental health issues. The workplace environment or culture may also present unhealthy factors that put one's mental health at risk. A person's occupation or job duties may contribute to the level of risk experienced by an individual. Many tools that were appraised focus narrowly on one or two areas leaving large gaps of unexplored sources of risk. Only one third of the tools reviewed measure concerns in all identified areas. To assess the factors that indicate a risk to one's mental health in the workplace, it is essential that a tool is comprehensive and considers measurement in all domains.

Most of the tools reviewed were efficacious however; they fell short in proposing any recommendations to address identified concerns. Only the Pressure Management Indicator offered any suggestions regarding how the organization, individual or clinician

could initiate change. Recommendations that were proposed in this tool lacked specificity, limiting the ability to implement change with efficacy.

To continue discussing the information that influenced the development process of the WMHRA, various theoretical models and grey literature will be presented. Grey literature in this thesis refers to documents produced by established mental health associations such as the Canadian Mental Health Association (CMHA) and the Canadian Psychiatric Research Foundation (CPRF).

2.4 Influencing Models

Given the identified gaps in the scope of other assessments, the WMHRA was developed using the Person-Environment-Occupation model (PEO) (Law, Cooper, Strong, Stewart, & Letts, 1996) as a framework. All domains that were identified as important to measure during the tool appraisal process are incorporated into this PEO model. All domains are equally important and therefore are all critical for inclusion within a WMHRA. Design of the questions and mitigation ideas was guided by two dominant models regarding psychosocial risk factors in the workplace along with additional research articles and grey literature. The following is a critical appraisal of the relevance of the influential models and information that guided this tool development.

2.4.1 Person-Environment-Occupation (PEO) Model

The PEO model was introduced in 1996 by a group of occupational therapists in Canada (Law et al., 1996). This model proposed that occupational performance is influenced by the dynamic relationship between a person, their environment and their occupations. The person is defined in a holistic way within this model, therefore including mind, body and spirit. One is described as being unique in terms of roles

chosen and the way in which one engages in those roles. The environment is defined broadly to include "cultural, socioeconomic, institutional, physical and social considerations" (p. 16). Occupations are defined as being composed of tasks and activities added together. People engage in daily occupations in order to meet their basic human needs (Wilcock, 2006).

Law et al. (1996) suggested that the PEO model creates an opportunity for occupational therapists to utilize a greater variety of assessment tools from other disciplines to accurately assess the environment and the occupation. An increased variety in assessment measures brings increased options for interventions given this wider scope. This model emphasizes the idea that with awareness of person, environment and occupation in the assessment phase, one can improve occupational performance through change directed from any one of the three domains.

The development phase of this workplace risk assessment was influenced heavily by the domains of the PEO model as it introduced helpful avenues for assessment applicable to the workplace. Subsequent literature will illustrate that risk factors for mental illness in the workplace can be identified within all three areas identified in the PEO model. Through using this PEO model, an opportunity is provided for change to be initiated from numerous starting points within these three areas. With the aim of primary prevention of mental illness in the workplace, having abundant options to detect and prevent risk is essential (Vezina et al., 2004).

2.4.2 Job Strain Model

Karasek developed the Job Strain Model in 1979. This model is commonly referred to as the demand–control model, or more recently the demand-control-support model.

Karasek (1979) posited that stressors in the workplace develop through an imbalance with key features of demand and control. Job demands are defined by Karasek as work load, conflicts or other stressors. Control is defined as decision latitude, or any possible action that can be taken to manage a stressor. As job demands increase and control decreases, the result is mental strain on an individual. Research has linked this model to the experience of depression, burnout, and addictions (Vezina et al., 2004). Canadian research identified that workers exposed to job strain experienced twice as much distress psychologically as compared to those who were not exposed (Vezina et al., 2004). Karasek does identify alternative experiences where active jobs are defined by increased demands and increased control, and learned helplessness is created through a decrease in both factors (Karasek, 1979). These factors are important to consider in terms of measurement of risk within the occupation domain.

In the late 1980's Karasek added the attribute of support into his job strain model. Karasek (Karasek et al., 1998) stated that the most problematic combination of risk factors in the workplace is that of high demands, low control and low support. These authors define support as being any helpful social interaction with workplace peers or supervisors. This support may be in the form of socio-emotional support such as trust, group cohesion or healthy relationships. Support may also come in the form of instrumental support which involves providing assistance to another individual to augment task performance (Vezina et al., 2004). Research regarding return to work outcomes for people with mental illness found that many employees who returned to a job with poor support from supervisors or peers were not able to remain at work (Cowls & Galloway, 2009). This added factor of support within the job strain model implies the

need to measure level of support when measuring risk factors within workplace environment/culture domain.

2.4.3 Effort- Reward Imbalance

A model of social reciprocity was proposed by Siegrist (1996) as an alternative to the job strain model by Karasek to identify psychosocial risk factors in the workplace. The effort-reward imbalance model is influenced by the theory of social reciprocity with the belief that work is a contract. In keeping with this theory, it is suggested that efforts or work achievements made by employees should be rewarded appropriately (Siegrist, 1996). Problems arise when there is a lack of reciprocity between the costs and gains at work. Long term exposure to an imbalance between the efforts put out and the rewards received can cause emotional distress (Siegrist, 1996). Estimations report that up to 40% of workers may be exposed to an effort-reward imbalance to some degree (Vezina et al., 2004). This model helps to guide measurement of factors within the occupation and workplace environment/culture domains.

Effort is described as the contributions put forth by an employee that are influenced by both extrinsic and intrinsic factors (Siegrist, 2005). Extrinsically driven factors such as time pressure, interruptions, number of responsibilities and overtime may impact the effort necessary at work (Vezina et al., 2004). Intrinsic factors that shape the effort put forth by an employee may be issues such as personal attitudes or motivation such as the need to receive approval through achievement. Siegrist (2005) defines reciprocity or rewards in the workplace as coming from three sources; money, esteem and career opportunities e.g. job security or promotion.

Despite the negative impact that this imbalance may have on an employee, one may continue working in such an environment due to reasons such as; limited choice for work, limited skills, social pressure or unhealthy motivation leading to behaviours such as over commitment (Siegrist, 2005). When psychosocial risk factors are detected within a workplace, it is recommended that interventions focus on creating a healthy sense of social reciprocity through education and an improved provision of a variety of rewards (Siegrist, 2005).

Common denominators can be identified between these two models of occupational psychosocial risk factors. Potential areas to consider for the WMHRA are the following: decision authority; skill utilization; workload quantity, complexity and time pressures; general psychological demands; role conflict and ambiguity; concentration; relationships i.e. support offered or hostility demonstrated; career prospects; physical loading, overall organizational culture i.e. structure and fairness (Vezina et al., 2004).

2.5 Additional risk factors gained through research and grey literature

2.5.1 Job insecurity

Karasek posited a compelling argument indicating that job strain leads to psychosocial risk. However, other researchers believe a new workplace factor, job insecurity, needs to be considered as a source of risk as well. Given the reality of increased globalization and competition, organizations are experiencing great change, thus job security is constantly at risk (D'Souza, Strazdins, Lim, Broom & Rodgers, 2003). The reality of this change is that employees experience frequent job changes; more availability of casual versus permanent jobs; and termination is a regular occurrence (D'Souza et. al., 2003). Through research, these authors demonstrated that job insecurity contributes to depression and

anxiety at higher rates than that of job strain alone. The experience of job insecurity led to 28% of employees being diagnosed with depression and 24% with anxiety. Job insecurity is an important source of risk that needs to be considered when designing the WMHRA.

2.5.2 Shift Work

Shift work, particularly the overnight shift, is well documented as having a negative impact on one's health (Bara & Arber, 2009; Costa, 1996). Working through the night disturbs the circadian rhythm, leads to less sleep, interferes with socialization, and reduces work performance and efficiency (Costa, 1996). Bara and Arber (2009) completed a study over a ten year period from 1995 to 2005 with participants who worked shift work. Findings from this study clearly outlined that employees who work shifts, particularly the overnight shift, experience greater prevalence of anxiety and depression than those who routinely work during day time hours (Bara & Arber, 2009). Thus the structural organization of work demands is an important factor to consider for inclusion within the WMHRA.

2.5.3 The built environment

Given that humans tend to spend 90% of our lives indoors, it is essential that the built environment is considered as a potential contributor to our health (Evans, 2003). Therefore, the environment in which one works may have an impact directly and indirectly on one's health. Evans (2003) posited that issues such as crowding, noise, poor air quality, and poor lighting may all contribute directly towards psychosocial distress. Indirectly, the environment may negatively impact psychosocial wellness through interfering with personal control. Health is optimized in an environment where one can

control one's surroundings. Therefore, when one's freedom to move about is limited by the environment or one's ability to access quiet personal space is limited, one's health may be jeopardized (Costa, 1996). Consideration of the impact of the physical space in which work is conducted is important for this risk assessment.

2.5.4 Stigma

As stated earlier, willingness to disclose about mental illness is quite low in the general population (Service, 2004; Myette, 2008). Without disclosure, the unfortunate result is that many will not receive necessary treatment (Glozier, 1998). The desire to hide the diagnosis of a mental illness in the workplace is strong and is largely based on the fear that public stigma may lead to questioning one's competency, damaging relationships and diminishing reputation (Clair, Beatty & Maclean, 2005). This drive to avoid stigma may be strong, however, it is suggested that maintaining secrets about a core aspect of one's identity has a negative impact on one's "psychological well being" (Hatchard, 2008). This fear is heightened in an organization where information is not kept confidential (Clair et al., 2005). Thus it is important to consider measuring the existence of stigma and the safeguarding of confidentiality in the workplace.

2.5.5 High risk occupations

Research suggests that exposure to work incidents such as accidents, violence or constant exposure to trauma through high risk work such as police or military service leads to an increased prevalence of depression and Post-Traumatic Stress Disorder (PTSD) (McFarlane & Bryant, 2007; Wilhelm, Kovess, Rio-Seidel & Finch, 2004). At present there are no tools that evaluate and support preventing risks related to these factors.

Several authors suggest that people who work in care giving professions may struggle with mental health concerns due to the nature of the work (Cowls & Galloway, 2009; Sabo, 2008; Wilhelm et.al., 2004). Caring for others causes substantial negative impact on the psychosocial health of health care professionals due to the empathy and emotional energy required to perform the job (Sabo, 2008). Focusing on the needs of others through work such as nursing, social work, medicine or psychology may often lead to employees neglecting their own needs resulting in higher incidence of depression and suicide (Cowls & Galloway, 2009; Wilhelm et. al., 2004). Work that involves care giving may be particularly high risk for developing a mental health issue if it involves traumatic content (Sabo, 2008). This author elaborates on this point to indicate that indirect exposure to trauma through this type of work may cause vicarious traumatization. Therefore, occupations that involve exposure to trauma or require constant caregiving may be considered important risk factors for inclusion within the WMHRA.

2.5.6 Factors related to the person/employee

While the above models and research clearly identify risk factors within the occupation and with the organizational environment or culture, there was limited focus placed on the risk factors within the person or employee. Additional risk factors were derived through research regarding particular occupations or in regards to particular diagnoses that may impact the person category within the WMHRA. Given that depression and anxiety have been identified as the most prevalent diagnoses experienced in the workplace, a focus will be placed on risk factors that signal vulnerability for an employee to experience illnesses such as withdrawal from others or nervousness at work.

When considering which mental health risk factors to include regarding the person, the Diagnostic and Statistical Manual 4th edition (DSM IV) (American Psychiatric Association, 1994) was the first resource consulted. This manual is highly regarded as the principal tool used by physicians for diagnosing mental illness (Schott, 1999). Individual signs and symptoms of depression and anxiety are outlined within this manual as criteria for diagnosing these disorders.

Depression is marked by symptoms of sadness, loss of interest, sleep disturbance (more or less sleep), lack of energy, decreased concentration, difficulty making decisions and change in eating habits (increased or decreased). General anxiety disorders are identified by physical complaints such as chest pain or increased heart rate, fear, social withdrawal, and excessive worry.

The Canadian Psychiatric Research Foundation (CPRF) (2007) outlined similar "red flags" for detecting risk factors within the person or employee domain that are specific to work. Cues that an employee may be struggling with stress or mental health issues were identified within three areas; poor work performance, personal changes and social changes.

Within the area of work performance, issues to be concerned with were identified as change in hours worked i.e. increased sick days or increased hours worked; and decreased productivity i.e. efficiency, quality, and dependability (CPRF, 2007). Within personal changes, issues outlined in this literature included difficulty with memory and concentration; fatigue; and increased physical complaints. In regards to social changes, the following issues were proposed as red flags for mental health concerns; less cooperation with peers; increased conflict; hostile; withdrawal from others; or

dependence on others (CPRF, 2007). Literature offered by the Canadian Mental Health Association (2004) echoed the above risk factors. All of these work specific factors are important risks to consider in the development of the WMHRA.

The following tables clearly identify each item currently in the WMHRA and the source that influenced choosing this item. Sources stem from various backgrounds such as current assessment tools, theoretical models, literature and grey literature.

Table 3

Sources used for items within person category

Question	Question details	Source supporting item inclusion
1	Memory	American Psychiatric Association (APA), Canadian Psychiatric Research Foundation (CPRF),2007; Canadian Mental Health Association (CMHA), 2004; City of Toronto Assessment.
2	Concentration	APA, Beck Depression Inventory-II (BDI-II), CPRF, 2007; CMHA, 2004; City of Toronto Assessment.
3	Decision making ability	APA, BDI-II
4	Physical health	Beck Anxiety Inventory (BAI)
5	Sleep	APA, BDI-II,
6	Level of confidence	BDI-II
7	Work performance	CPRF, 2007; CMHA, 2004
8	Attendance	CPRF, 2007; CMHA, 2004
9	Work pace	Karasek, 1979; Siegrist, 2005
10	Overwork	Karasek,1979; Siegrist, 2005
11	Level of anxiety	APA, BAI
12	Level of social interaction	BDI-II, CPRF, 2007; CMHA, 2004
13	Avoiding conflict	BDI-II, CPRF, CMHA
14	Aggression	BDI-II
15	Witnessing traumatic events	McFarlane & Bryant, 2007

Table 4

Sources used for items within workplace environment/culture category

Question	Question details	Source supporting item inclusion
1	Interpersonal relationships	Karasek et al, 1998; Cowls & Galloway, 2009
2	Recognition offered	Siegrist, 2005
3	Job security	D'Souza et.al., 2003
4	Amount of workplace change	Karasek, 1979; D'Souza et.al., 2003
5	Amount of expected change	Karasek, 1979; D'Souza et.al., 2003
6	Supervisory support	Karasek et al, 1998; Cowls & Galloway 2009
7	Support from co-workers	Karasek et al, 1998; Cowls & Galloway 2009
8	Stigma	Clair et al., 2005; Hatchard, 2008
9	Level of confidentiality	Clair et al. 2005; Hatchard, 2008;
10	Benefits provided	Karasek et al, 1998;
11	Performance appraisals offered	Siegrist, 2005
12	Distractions	City of Toronto Assessment
13	Availability of private space	Evans, 2003
14	Exposure to violence/ bullying	McFarlane & Bryant, 2007; Wilhelm et., al., 2004
15	Physical environment	Evans, 2003

Table 5

Sources used for items within occupation category

Question	Question details	Source supporting item inclusion
1	Shift work	Costa, 1996
2	Clarity of instruction provided	Karasek,1979; Cowls & Galloway, 2009
3	Deadline pressures	Karasek,1979; Siegrist,2005; City of Toronto Assessment
4	Boredom	Karasek, 1979; Siegrist, 2005
5	Repetitive tasks	City of Toronto Assessment
6	Unpredictable changes	City of Toronto Assessment
7	Multi- tasking	City of Toronto Assessment
8	Solitary work	APA, 1994
9	Job control	Karasek, 1979
10	Exposure to emotional distress	City of Toronto Assessment; Cowls & Galloway, 2009; Sabo, 2008; Wilhelm et. al., 2004;
11	Exposure to conflict	City of Toronto Assessment
12	Supervisory duties	City of Toronto Assessment
13	Level of responsibility	City of Toronto Assessment
14	Taking care of others	Cowls & Galloway, 2009; Sabo, 2008; Wilhelm et. al., 2004
15	Risk or exposure to violence	McFarlane & Bryant, 2007; Wilhelm et. al., 2004

Generation of the items within the WMHRA drew upon research, theoretical models or currently utilized assessment tools. However, it was unclear if these particular 45 items were appropriate for the purpose for which this assessment tool was designed. Streiner and Norman (2003) indicate that following item generation, the next step in tool development is to examine the content validity of the items which is the focus of this study. The following chapter will outline the research methods utilized to explore the content validity of the WMHRA.

CHAPTER THREE

The following chapter provides a detailed description of the research study that took place exploring the validity of the Workplace Mental Health Risk Assessment (WMHRA) items. Information in this chapter includes the design of the research; methods used; participant recruitment; sample size; the data analysis process; and quality criteria.

3.1 Study Design

In developing a measurement tool it is suggested that there are certain steps that one must work through to create a valid tool (Streiner& Norman, 2003). These authors suggested that one begin with the conceptualization of the tool, its purpose, use and scope. Secondly, information must be gathered to generate the items to be included within the tool. Determination of items may be a result of research findings, theories or models, or from information gathered from individuals with knowledge related to the topic (Streiner & Norman, 2003). Once the initial items have been generated, Streiner and Norman indicate that the third step in tool development is that of assessing face or content validity. The fourth and fifth steps outlined by these authors are that of piloting the tool and generation of the refined instrument.

Steps one and two of the WHRA development were addressed prior to this research through literature review and a peer review. This present study focused on step three, assessing content validity of all items initially generated. Steps four and five will not be pursued within the boundaries of this thesis and will be addressed in future research.

Development of the WMHRA began in 2005, three years prior to the pursuit of this Master's degree. As described in the previous chapter attention was given to step one,

the conceptualization and step two through literature review, and clinical experience (Streiner & Norman, 2003). A peer review process also took place involving two additional occupational therapists working in the field of mental health and work. These professionals carefully reviewed the items within the WMHRA and provided written and verbal feedback on the items. Additional items were suggested and recommendations were made regarding omitting redundant items or changing the wording of items. Given the development work completed to date, the next critical step in developing this tool was to evaluate the content validity of the items within the WMHRA (Streiner & Norman, 2003).

3.2 Methods

Establishing consensus regarding the items within the WMHRA was the aim of the current study. Through consulting the literature, two common strategies were identified for establishing content validity; the Content Validity Index (CVI) and the Delphi technique. The CVI involves seeking multi rater agreement related to the importance of each item on a four point Likert scale (Lynn, 1986). Lynn indicates that the CVI is optimal with less than 10 experts.

The Delphi technique enhances decision making through developing a group consensus from expert opinion (Hasson, Keeney & McKenna, 2000; Sumsion 1998). Previous research identified that the Delphi method is beneficial when there are limited research findings or body of literature to provide guidance about decisions for a particular subject matter (Sumsion, 1998). The Delphi method provides an opportunity to explore different judgments and gather fresh views from a diverse group of experts (Hasson et al., 2000).

In this study, experts were identified as professionals knowledgeable about mental illness or potential end users of the WMHRA. Given this diversity of experts, the CVI was deemed limited regarding the depth of feedback that could be obtained and the Delphi method was chosen as most appropriate for this study.

The Delphi method is an iterative process that involves multiple steps that build on one another (Keeney, Hasson, & McKenna, 2001). Initially questionnaires are distributed to a group of experts along with seeking qualitative information through focus group discussion (Hasson et al., 2000; Keeney et al., 2001). As recommended by these authors, a succession of questionnaires is distributed to experts and each subsequent questionnaire is referred to as a round. Information and data are collected, summarized and dispensed back to the participants in a subsequent round for further feedback. Ideally, this process continues until consensus is reached or until the return rate of participants has significantly diminished. Sumsion (1998) suggested that two to three rounds are preferred and that a 70% response rate is ideal. This study builds upon the conceptual and research knowledge on the subject and focuses on moving forward to gain further expert review. Therefore, two rounds were deemed sufficient by the advisory committee.

The following figure offers a summary of the study design that used the Delphi method.

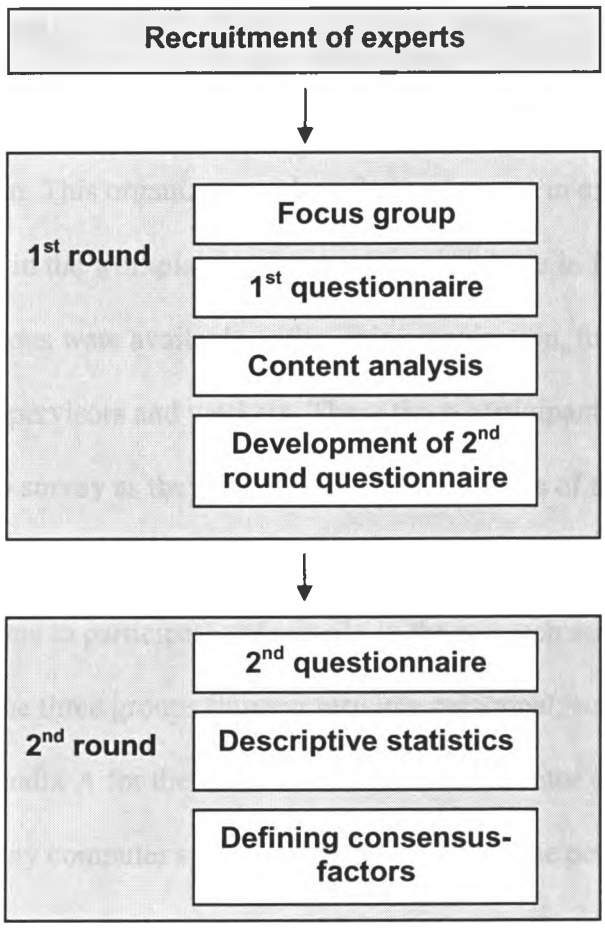

Figure 1- ***Overview of Delphi method***

3.3 Participant Selection

This study used purposive sampling to gather experts who would provide a range of opinions relevant to this research question (Hansson et al., 2000). Through discussions with this study's advisory committee, experts for this study were identified as potential end users of the WMHRA. Therefore, sampling was aimed at participants within the following categories: workers, supervisors, human resource personnel, physicians and occupational therapists. As recruitment of some categories proved difficult, for example the worker population, the strategy of sampling by convenience was employed (Patton, 2002).

3.3.1 Sampling process

Initially all sampling was pursued through a Toronto location of a large global consulting organization. This organization identified an interest in exploring ways to address mental illness in the workplace and agreed to participate in formal research. A variety of expert opinions were available within this organization, for example, human resource personnel, supervisors and workers. These three participant groups were considered essential to survey as they are the potential end users of this assessment.

Ethics approval was obtained from the University of Western Ontario Research and Ethics Board. Invitations to participate voluntarily in the research were emailed randomly to 600 people across the three groups (human resource personnel, supervisors and employees). See Appendix A for the email invitation. The Director of Human Resources (HR) utilized a company computer system to randomly select the people within each of the three categories who would receive the email invitation. Willingness to participate was demonstrated by responding via email to the investigator associated with the University. Please see Appendix B for the letter of invitation.

Despite the large number of invitations that were emailed, no employees were willing to participate and only three supervisors responded. The Director of HR suggested that human resource personnel could participate in the focus group while gathered for a monthly meeting, making the focus group timing more convenient. Only those who wished to participate in this study attended one and a half hours prior to the time of the regular HR meeting agenda ensuring that volunteering was optional. This approach yielded thirteen human resources personnel.

Given the lack of employees representing the worker opinion, it was suggested by the advisory committee that alternative recruitment locations be pursued. Further to this it was identified that representation from the rehabilitation/medical side of this issue be included as experts to review the items within the tool. Experts for the Delphi method were identified as end users of the tool as well as professionals who may have expert opinion about the appropriateness of the content of the tool items. Ethics amendments were made and approved to broaden the sampling populations. This expansion of participant selection occurred two years after the initial data gathering began.

The worker point of view was gathered through sampling graduate students who had worked for at least two years, in any occupation, prior to pursuing their studies. The standard invitation was emailed from the Chair of the Health and Rehabilitation Sciences Graduate Program to all graduate students within this program. Advertisements for participation in this study were also posted within Elborn College on general bulletin boards. See Appendix C for the poster approved by the UWO research and ethics board.

The rehabilitation and medical viewpoints were sought through inviting occupational therapists (OT) and physicians within a mental health facility to participate in the study. This organization was chosen as a sample of convenience (Patton, 2002) as the author of this study is also an employee of this hospital. This author has no supervisory responsibilities within this organization limiting any potential for coercion. Ethics approval for this study was also obtained from the ethics committee at this facility.

Invitations to participate in this study were emailed to all OTs through the Director of OT at the mental health facility using the standard email invitation. Physicians within this facility were recruited using the same email invitation delivered to them from the Chief

of Staff. Willingness to participate in this study was identified through emailing this author directly. All participants were given a letter of information and signed consent was obtained prior to their participation.

3.4 Sample Size

Sampling from the Toronto organization yielded 13 participants in the human resources category and three supervisors. The worker (student) group achieved five participants while 20 occupational therapists and three physicians volunteered to participate. The total initial number of participants involved in this study was 44.

3.5 Data Collection

Data were collected qualitatively and quantitatively through focus group discussions and through questionnaires. Each group of experts began this research in a focus group format. Information was presented by this researcher in relation to the topic of mental heath and the workplace as well as to the background of the WMHRA development. All items within the WMHRA were presented during each focus group. Questions were asked of each group in order to seek feedback on the content and applicability of this tool. See Appendix D for questions approved by the research and ethics board.

Focus groups took place at a convenient location for all participants at the various sites involved and lasted approximately 60-90 minutes. To ensure accuracy of the qualitative data gathered during the focus group discussion, all groups were audio-taped and transcribed verbatim by a transcriber.

Following the focus group discussion, questionnaires were handed out for participants to complete. This first questionnaire was identified as round one of the Delphi method as identified in Figure 1.0. Initial phases of this data collection were completed in 2007 in

conjunction with a Master's of Occupational Therapy Student Research in Occupation (SRO) project. The round one questionnaire used in this research was designed by the SRO student. All 45 items were presented in this questionnaire as worded in the WMHRA. Within the design of the WMHRA each item is accompanied by a 1-4 rating scale with qualifiers for scoring purposes. This feature was not included in the questionnaire for the Delphi rounds. . For example, within the WMHRA question #10 reads:

Do you work your required (or agreed upon) hours?

1. only work required or agreed upon hours
2. work 1-5 extra hours/week
3. 6-10 extra hours/week
4. more than 10 additional hours/week

Only the question "Do you work your required (or agreed upon) hours?" was presented as an item to be rated in the questionnaire. No information about the scoring qualifiers (numbers 1to 4) was included along with the items. For each round of the Delphi method all items were rated using the following seven point Likert scale indicating how important the item is for evaluating mental health risks:

a very great extent	a great extent	a fairly great extent	a moderate extent	a small extent	a very small extent	not at all	n/a
7	6	5	4	3	2	1	0

Three months following the final focus group, a second questionnaire (round two) was sent out via email to all participants as identified in Figure 1.0. Two and a half weeks were provided for completion of the questionnaire. Responses could be returned directly

to this researcher via email or by hand to a mailbox within this researcher's workplace. Prior to the return deadline reminders were sent out via email to specific participants who had not yet returned their questionnaires. In total, participants received two to three reminders to complete and return their questionnaires. Round two yielded only 22 responses in total; zero from human resources, one from supervisors, 2 from physicians, 5 from workers and 14 from occupational therapists. Data collection began in September 2007 and was completed by October 2009.

3.6 Data analysis

All decisions related to the data analysis were made collaboratively between this author and her thesis advisor. Transcriptions from the focus groups were analyzed for both the content and process information provided. Given that the research question was focused on gaining consensus within the items of this tool, the qualitative analysis of the process information will not be presented or discussed within this paper; rather it will be analyzed and then used to develop a guide for implementing the tool.

3.6.1 Qualitative analysis

A content analysis (Patton, 2002) was completed on the qualitative information to identify new items, proposed by participants, as potential psychosocial risk factors to be considered for this tool. Suggestions were compared across focus groups to seek out some level of consensus about additional items that needed further exploration. This author and the thesis advisor independently analyzed data to create a list of suggestions for new items, see Table 6. A decision was made that items suggested two times or more by different participants achieved sufficient consensus as an item to be considered more closely.

Next, these suggestions were reviewed to examine whether or not they were new items or if they related to already existing items or perhaps worded differently but may closely resemble another concept. For example, several suggestions were made to add items related to support or connection with others. Rather than adding a new item to this assessment, it was determined that existing items such as "How would you describe the general support from co-workers"; "How are interpersonal relations at your workplace"; and "How would you describe the support of your supervisor" could be re-worded to capture the suggestions made by participants in the focus groups. Potential factors that were mentioned two times or more and were determined to be new ideas were added to the questionnaire for feedback in round two of the Delphi process. The following table outlines all of the items proposed as new risk factors by participants. This table also outlines the decision made regarding each item. Credibility of this analysis process was achieved through strategies such as peer debriefers (advisory committee), coanalysis (supervisor) and researcher reflexivity (Morrow, 2005)

Table 6

Suggestions for new items

Suggested item	# of times mentioned across all groups	Decision regarding item
Control	2	excluded due to redundancy
Isolation	3	excluded due to redundancy
Sleep	1	excluded due to redundancy
Fatigue	1	excluded due to redundancy
Harassment, bullying violence	4	excluded due to redundancy
Friendship	2	excluded due to redundancy
Social support	4	excluded due to redundancy
Supervisor support	3	excluded due to redundancy
Use of technology	3	included in round two
Lateness, absenteeism	3	excluded due to redundancy
Impact of physical space	1	excluded due to redundancy
Privacy	1	excluded due to redundancy
Resources available	2	excluded due to redundancy
Impact of personal life	3	included in round two
Presence of alcohol and drugs	3	included in round two
Confidentiality	2	excluded due to redundancy
Physical illness	2	excluded due to redundancy
Commute	3	included in round two
Changes in behaviour	4	included in round two

3.6.2 Quantitative analysis

Quantitative data were analyzed using the Delphi method, along with a decision tree designed to analyze consensus related to each item. Data gathered through questionnaires were analyzed within expert groups, across groups and as a whole across all participants. There is a lack of consistency regarding the analysis of data gained through the Delphi method (Keeney et. al., 2001). Therefore, the author of this study made decisions regarding the data using information gained from two previous research studies. Whiting, Rutjes, Reitsma, Bossuyt and Kleijnen (2003) outlined that in their research, any item that obtained 75% or more of the scores within the "strongly agree" category (on a five

point Likert scale) was considered to have achieved sufficient consensus to maintain this item within the assessment. In terms of eliminating items, Sumsion (1999) stated that with a small number of participants, if 10% rated an item very low, this rating would identify sufficient concern to question the item's validity.

3.6.3 Decision tree

Guided by decisions from previous research, this study outlined a consistent decision process to be applied to all items within the questionnaire. See Figure 2.0. To determine which items achieved consensus related to importance within the tool, percentages were calculated for each item rated at a six or seven. Any item that received a score of 75% or higher across both rounds, or that increased in round two to 75% or above, was considered to have consensus as being important and was therefore maintained in the tool.

Percentages were also calculated for items that scored a four or less on the questionnaire rating. Items were considered to be of concern and in need of further examination if 10% or more of participants rated them a 4 or less across both rounds or on round two of the Delphi. Once identified as a concern, two questions were asked about the potential origin of the problem with the item; is it a problem with the wording of the item or a problem with the fit for this tool? Within the issue of wording, two potential issues may exist related to lack of connection to an identified risk factor or lack of contextualization to the workplace. Within the issue of fit, two issues are identified related to lack of fit in the workplace (i.e. lack of observable behaviours in the workplace), or lack of fit with the overall purpose of the tool. This tool is designed using a post-positivist perspective of risk measurement which entails having items that are

psychosocial risk factors which are concrete and observable in the workplace. Therefore items that are not observable at work or do not on their own pose a risk to one's mental health may be a poor fit for the WMHRA. Following the examination of each problematic item, one of two decisions will be made; to re-word the item or to eliminate the item from the tool altogether.

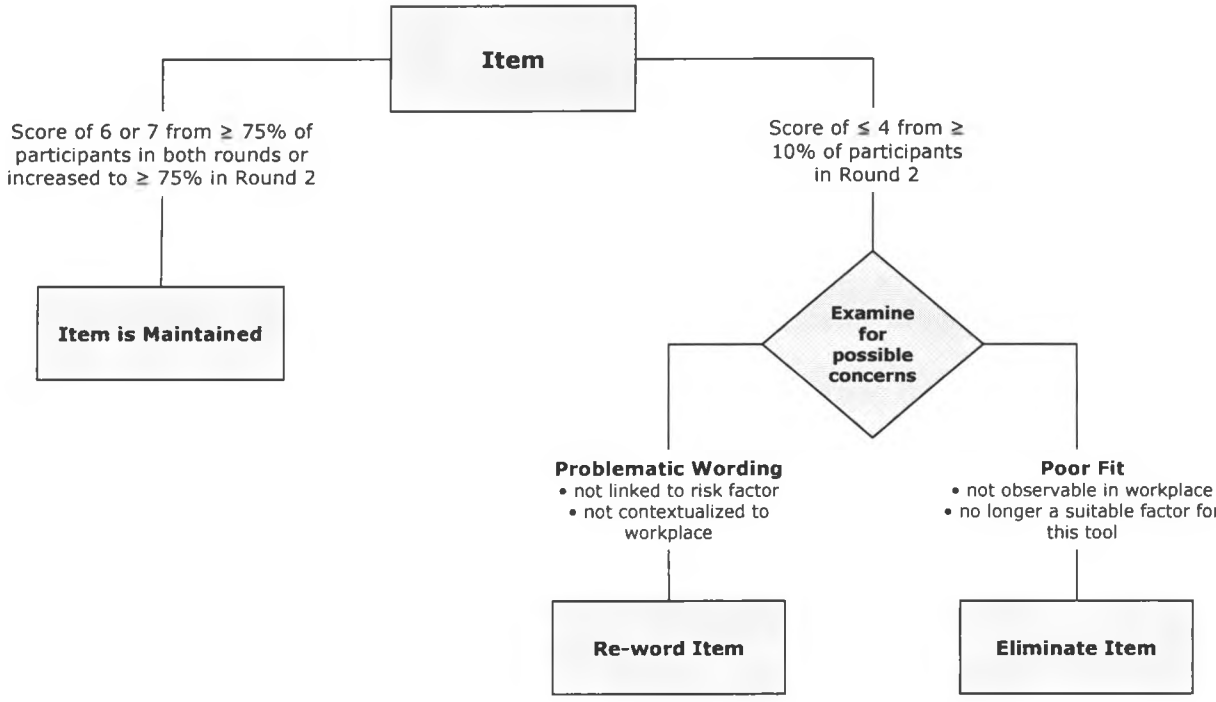

Figure 2- ***Data Analysis decision tree***

In the data analysis phase difficulties arose about where to place the score of five. Through analyzing the data it appeared that many participants rated numerous items at a score of five. Kulas and Stachowski (2009) suggested that participants often give a neutral rating on Likert scales due indifference or ambivalence which at times leave a score appearing like a "dumping ground" (p. 489). Given this observation about the score of five, it was decided not to place a rating of five within the "important" or "of concern"

category as this would immediately sway the results in one direction and potentially dilute the findings.

The decision to leave "fives" out of the equation, allowed for a more definitive consensus to be achieved for maintaining an item and for a more critical eye to be applied to more items in the lower end of the scoring range. For this reason, any item that received many ratings of five and therefore did not meet the criteria for consensus in either direction would also undergo the same process of examination as the "of concern" items.

3.7 Quality Criteria

Data analysis was completed by both the researcher and her thesis advisor to achieve consensus on decisions made. Items were taken through the decision tree analysis process to ensure that the process was sound and there were no exceptions or oversights. This decision process was reviewed and approved by the advisory committee. A journal was maintained by the researcher throughout the research process to facilitate reflexivity (Finlay, 2002). Given that this tool was created by this researcher it was important to consciously remain objective about findings in the literature or within the data collection. Journaling allowed for concerns or questions to be identified. For example, some items achieved consensus to be maintained in the WMHRA, however, their wording did not fit clearly with the post-positivist perspective. Issues such as this were raised through the reflexive journal and processed either alone or with the thesis advisor with the aim of making decisions that were consistent with the nature of the study and the post-positivist approach.

Streiner and Norman (2003) suggested that one must work through particular steps in tool development to create a valid and effective tool. Step one, conceptualization of the tool began by creating the idea of the WMHRA prior to pursuit of this Master's degree. Generating items is required in step two, which was addressed through a review of literature, theoretical models, and grey literature as well as a peer review. The next step involved in tool development focuses on establishing content validity of the items. This step was the focus of this research and was addressed through utilizing the Delphi method. Results regarding each item within the WMHRA will be presented in the following chapter.

CHAPTER FOUR

This chapter will outline the demographics of participants in this study including information regarding drop out rates across the two rounds. Data will be provided for both round one and round two in a summary of scores leading to the decision process of each item. The analysis process and resultant recommendation will be outlined for all 51 items. Items that were deemed in need of re-wording will be attended to and the final 37 items to be maintained in the Workplace Mental Health Risk Assessment (WMHRA) will be presented.

4.1 Delphi round one results

Each of the five expert groups participated in one focus group at the beginning of round one of the Delphi method. The purpose of these focus groups was twofold; to obtain feedback regarding the applicability of the WMHRA in the workplace; and to generate additional items for the tool. The following suggestions from focus groups were mentioned two or more times and were included in the round two questionnaire: issues related to commute; use of technology; external pressures; sudden changes; and addictions. These five items were worded as a question similar to other items and were included at the end of the questionnaire as items 46 to 50.

Due to the choice of presenting items in the questionnaire as they are worded in the assessment tool, some items seemed unclear for participants to score. During focus groups, answering participant questions provided some clarity about item purpose. However, during the analysis phase it seemed that the meaning or purpose behind one question may have been misunderstood. Item # 10 "Do you work your regular (or agreed upon) work hours" was consistently scored low. This item was meant to convey the

concern regarding an employee's overwork which both the researcher and thesis advisor believed to be important. Therefore, a decision was made to reword this question to include in the round two questionnaire in order to gain more accurate feedback regarding this issue.

Round one questionnaires were completed by 100% of the participants in the focus groups which resulted in 44 questionnaires in total. Within the OT group, based on inconsistencies in the scoring of one questionnaire it was determined that the questionnaire had been answered personally rather than focusing on the relevance of items for this assessment tool. Results from this questionnaire were therefore omitted from the analysis of round one leaving N=43 in total.

4.2 Delphi round two results

The response rate for round two was very low within the HR and supervisor participants as identified in Table 7. These participants began the study two years before round two was initiated and therefore there may be many reasons for the poor response rate. Via automatic email messages received upon delivery of the round two questionnaire it was identified that three participants were no longer with the Toronto company and two additional participants were on a one year leave of absence. Only one participant of 16 from this company responded to round two. Therefore, a decision was made to eliminate the quantitative data from both round one and two from the HR and supervisor categories as consensus could not possibly be achieved with such a poor response rate. When comparing scores between groups in round one, they did not vary greatly between these two groups and the remaining three. Data used to gain consensus

regarding whether to maintain an item or further examination of an item was gathered strictly from the worker, occupational therapist and physician groups.

Within the final three expert groups, 21 of 28 participants responded to the round two questionnaire. Again it was determined that one participant answered the questions personally and therefore results from this questionnaire were also omitted. Analysis for the results in round two involved 20 participants which equals a response rate of 71%. This response rate is consistent with recommendations outlined for the Delphi method (Sumsion, 1998).

The following table provides an outline of the demographics within the five focus groups as well as their response rates across both rounds.

Table 7

Participant sample and demographics

Group	Workers	Supervisors	HR	OT	Physicians
Initial Sample	5	3	13	20	3
Final sample	5	1	0	14	2
# of Males	0	0	4	1	2
# of Females	5	3	9	19	1
Education					
- *Post Secondary*	--	66%	100%	40%	--
- *Graduate*	100%	33%	--	60%	--
- *Post Graduate*	--	--	--	--	100%
Occupation Sector	Health Care	Business	HR	Health Care	Medicine

4.2.1 Item Consensus

Scores were examined within each expert group to determine the percentage of scores rated at a 6-7 or those scored at ≤ 4. Table 8 and Table 9 outline the summary of scores across rounds one and two. Although items were presented randomly to participants

within the questionnaires, the data outlined from this point on were reorganized to be in the order designed within the WMHRA.

Table 8

Round one summary of scores

Item #	Supervisors N= 3		Physicians N=3		Workers N=5		HR N=13		OT N=19		Total % of scores	
	6-7	<4	6-7	<4	6-7	<4	6-7	<4	6-7	<4	6-7	<4
1	2	0	3	0	2	2	7	1	12	4	63	**22**
2	3	0	2	1	3	2	12	0	15	3	74	**22**
3	2	0	1	1	3	2	12	0	12	3	74	**22**
4	3	0	3	0	3	2	9	1	15	0	**78**	7
5	3	0	3	0	3	1	11	1	14	1	74	7
6	2	0	1	1	2	1	11	0	13	2	59	**15**
7	1	2	2	1	3	1	9	2	13	4	69	**22**
8	3	0	2	1	2	1	11	1	15	0	70	7
9	2	1	2	1	1	1	4	4	8	1	41	**11**
10	2	0	0	2	1	0	6	7	13	2	52	**15**
11	2	0	3	0	3	1	13	0	16	1	**81**	4
12	3	0	3	0	4	1	13	0	15	2	**81**	**11**
13	2	0	0	3	2	1	8	2	9	7	41	**41**
14	3	0	0	2	3	1	6	1	14	1	63	**15**
15	2	1	1	1	1	2	6	4	17	1	70	**14**
16	2	1	2	0	4	1	9	1	13	1	70	15
17	0	1	3	0	5	0	8	2	15	0	**85**	0
18	3	0	3	0	5	0	11	0	15	0	**85**	0
19	1	1	3	0	3	2	8	3	12	5	67	**26**
20	1	2	1	0	2	2	4	6	11	4	54	**22**
21	3	0	3	0	5	0	11	1	16	1	**89**	3
22	1	1	3	0	4	1	10	2	13	4	73	19
23	1	2	3	0	4	0	9	1	18	0	**93**	0
24	1	0	3	0	3	0	12	1	15	1	**78**	4
25	0	1	3	0	5	0	6	3	11	2	70	4
26	1	1	1	1	1	1	3	1	11	5	48	**26**
27	1	0	0	1	0	2	6	3	6	7	22	**37**
28	2	0	0	1	1	0	7	3	12	3	48	**15**
29	2	0	1	1	5	0	8	1	18	1	**89**	7
30	1	0	1	0	1	2	6	1	8	3	**37**	**19**
31	1	2	3	0	3	1	6	5	11	4	63	**19**
32	0	0	2	1	4	0	6	1	10	3	59	**15**
33	3	0	2	0	4	1	10	0	16	1	**81**	7
34	0	1	0	3	2	2	5	6	5	8	26	**48**
35	0	0	0	2	1	2	2	5	5	6	22	**37**
36	2	0	3	0	4	0	3	4	13	2	59	7
37	1	1	1	1	2	2	6	3	11	3	54	**22**
38	2	1	0	3	2	2	5	6	4	8	22	**48**
39	2	0	2	0	5	0	6	2	15	0	**81**	0
40	3	0	2	0	4	0	10	1	18	1	**89**	4
41	2	0	2	1	5	0	10	0	16	2	**85**	**11**
42	1	0	1	2	1	2	2	5	8	6	37	**37**
43	2	0	2	1	5	0	9	2	12	2	70	**11**
44	1	0	0	3	4	0	8	1	15	1	70	**15**
45	3	0	2	1	4	0	10	2	19	0	**93**	4

Note: % of scores does not add up to 100% due to the score of "5" being excluded. Scores in bold indicate those that are deemed significant.

Table 9

Round two summary of scores

Item #	Physicians N= 2		Workers N=5		OTs N=14		Total % of scores	
	6-7	<4	6-7	<4	6-7	<4	6-7	<4
1	0	2	1	3	9	3	50	**40**
2	0	0	1	1	9	00	50	5
3	1	1	4	0	8	2	65	**14**
4	1	0	1	2	10	0	60	9
5	2	0	3	1	11	0	**80**	4
6	1	0	2	1	9	0	60	5
7	2	0	1	2	11	0	70	9
8	2	0	1	0	11	1	70	5
9	0	2	0	2	10	2	50	**28**
10	0	1	2	2	9	1	65	**19**
11	2	0	3	2	10	1	**75**	4
12	2	0	4	0	9	1	**75**	4
13	1	1	2	1	100	2	65	**19**
14	1	1	2	1	11	1	70	**14**
15	0	0	3	2	10	1	65	**14**
16	2	0	2	2	11	0	**75**	**10**
17	1	1	3	0	12	0	**80**	5
18	1	0	4	0	11	0	**80**	0
19	1	1	2	1	8	2	65	**19**
20	0	1	4	1	9	2	65	**19**
21	1	0	4	0	13	0	**90**	0
22	2	0	4	0	13	0	**95**	0
23	0	2	4	0	13	0	**85**	9
24	1	0	3	0	11	0	**79**	0
25	1	1	3	0	10	1	70	**48**
26	0	0	1	2	8	1	45	**14**
27	0	1	1	4	6	2	35	**33**
28	1	1	2	1	7	2	50	**19**
29	1	1	3	1	12	1	**80**	**14**
30	0	2	0	5	7	3	35	**48**
31	1	0	3	1	9	0	65	5
32	1	0	1	0	11	0	65	0
33	0	0	3	1	9	3	60	**19**
34	0	1	1	2	5	4	30	**33**
35	0	1	1	1	5	4	30	**28**
36	0	0	2	1	7	0	45	5
37	0	2	0	3	7	4	35	**42**
38	0	1	0	4	7	3	35	**38**
39	1	1	5	0	11	0	**85**	5
40	1	0	4	1	10	0	**80**	5
41	2	0	4	0	10	0	**80**	0
42	0	0	2	1	6	1	40	9
43	1	1	3	1	7	2	55	**19**
44	0	1	3	1	11	0	70	**10**
45	2	0	4	1	11	0	**85**	0
46	0	0	0	1	6	1	30	**10**
47	0	2	0	3	6	0	30	**23**
48	2	0	4	1	10	1	**80**	**10**
49	2	0	5	0	11	1	**90**	5
50	1	0	3	0	11	1	**75**	5
51	1	0	3	1	9	1	65	**10**

Note: % of scores does not add up to 100% due to the score of "5" being excluded. Scores in bold indicate those that are deemed significant.

From this summary of scores, an analysis process took place regarding each item according to the decision plan outlined previously in chapter three. Details of this decision process will be presented along with the resultant recommendation. Following this item by item analysis it was decided that consensus was achieved with 41 of the items (bolded items in table 9). Consensus to maintain an item was achieved for 18 of 51 items (those bolded in the second from right hand column on Table 9). Consensus that an item was of concern was achieved for 27 items (items bolded in right hand column of Table 9). However, three of these items identified as a concern (numbers 16, 29 and 48) also achieved high consensus to be maintained. These three items were therefore placed in the maintain category leaving only 24 in the category of concern.

Of those 24 items identified as a concern, 10 were deemed to be no longer an appropriate fit for a workplace mental health risk assessment and were therefore eliminated leaving 14 items of concern. Nine items did not achieve consensus as important or as an item of concern (due to receiving several ratings of five). Therefore rewording will be explored with 23 items (14 plus 9) that were identified as concerns and have either a poor link to risk factors or lack of contextualization to the workplace. Specific items that were eliminated or need re-wording will be clearly identified in the results section below.

4.2.2 Item Results

Each item will be presented in terms of the percentage of consensus achieved as well as the issues identified and the resultant recommendations. The following figure serves as an example of the complete template of all analysis possibilities.

Question #:

Consensus: % to maintain item or % that identified item as problematic

Issues related to wording

☐ Not clearly linked to research or risk factors

☐ Not clearly contextualized to the workplace

Issues related to fit

☐ Not an observable behaviour in the workplace

☐ No longer a risk factor suitable for this assessment

Recommendation:

☐ Item maintained within the assessment

☐ Re-word

☐ Eliminate from assessment

Figure 3 ***Sample of complete analysis process and decision possibilities***

To keep the presentation of these findings concise, each item will be presented followed only by the decisions applicable for that particular item. Items are organized in the same order as presented in Table 7 and Table 8 however they are now identified as fitting under the category of person, environment/ work culture or occupation to be consistent with the of the Person-Environment-Occupation model (Law et. al., 1996) that is the framework for the WMHRA.

Person:

Question 1: How would you describe your memory?

Consensus: 40% agreed that it was a poor item

Issues related to wording

☒ Not clearly contextualized to the workplace

Recommendation:

☒ Re-word

Question 2: How would you describe your concentration?

Consensus: No consensus was obtained to maintain this item, only 50% rated it 6 or 7. Only 5% identified it as a poor item in round two.

Issues related to wording

☒ Not clearly contextualized to the workplace

Recommendation:

☒ Re-word

Question 3: How would you describe your ability to make decisions?

Consensus: Consensus was reached to identify this item as a poor item as 22% of participants rated at a 4 or below in round one and 14% in round two.

Issues related to wording

☒ Not clearly contextualized to the workplace

Issues related to fit

Recommendation:

☒ Re-word

Question 4: How would you describe your current physical health?

Consensus: Consensus dropped in second round from 78% to 60%. No consensus was achieved to identify it as a poor item, only 9% rated it 4 or below.

Issues related to wording

☒ Not clearly contextualized to the workplace

Issues related to fit

Recommendation:

☒ Re-word

Question 5: How would you rate your sleep?

Consensus: Increased in second round to 80% that rated this at a 6 or 7.

Recommendation:

☒ Item maintained within the assessment

Question 6: How would you rate the confidence in your job skills?

Consensus No consensus was obtained to maintain this item, only 60% rated it 6 or 7.

Only 5% identified it as a poor item in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 7: How would you describe your work performance in the past six months?

Consensus: No consensus was obtained to maintain this item, 70% rated it 6 or 7.

Consensus to identify this item as a poor item reduced from 22% to 9% in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 8: How has your attendance been to work in the past six months?

Consensus: No consensus was obtained to maintain this item, 70% rated it 6 or 7. Only 5% identified it as a poor item in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 9: Do you take regular breaks?

Consensus: Consensus was reached to identify this item as a poor item as 28% of participants rated at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 10: Do you work your regular (or agreed upon) hours?

Consensus: Was achieved as19% identified this as a poor item

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 11: How would you describe your level of anxiety?

Consensus: Maintained across both rounds as 81% and 75% rating it at 6 or 7

Recommendation:

☒ Item maintained within the assessment

Question 12: How has your interaction with others changed in the past six months?

Consensus: Maintained across both rounds as important at 81% and 75%

Recommendation:

☒ Item is maintained within the assessment

Question 13: Do you avoid situations of conflict?

Consensus: Consensus was maintained across both rounds that this is a poor item. 41% of round one and 19% of round two rated this item at a 4 or below.

☒ Not clearly contextualized to the workplace

Issues related to fit

☒ Not an observable behaviour in the workplace

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 14: Do you react aggressively in situations of conflict?

Consensus: Consensus was maintained across both rounds that this is a poor item. 15% of round one and 14% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

☒ Not clearly contextualized to the workplace

Recommendation:

☒ Re-word

Question 15: Have you ever witnessed a traumatic event (e.g. serious accident, violence etc.)

Consensus: Consensus was maintained across both rounds that this is a poor item. 14% of participants from round one and round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly contextualized to the workplace

Issues related to fit

☒ Not an observable behaviour in the workplace

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Environment/workplace culture:

Question 16: Objectively, how are interpersonal relations at your workplace?

Consensus: Improved in second round to 75% of participants rating at 6 or 7

Recommendation:

☒ Item maintained within the assessment

Question 17: How well does your organization offer recognition for your work (e.g. good pay, verbal recognition, rewards, and/or promotions)?

Consensus: Maintained across both rounds as important at 85% and 80%

Recommendation:

☒ Item maintained within the assessment

Question 18: Do you worry about your job security?

Consensus: Maintained across both rounds as important at 85% and 80%

Recommendation:

☒ Item maintained within the assessment

Question 19: Has the nature of your job changed over the past year?

Consensus: Consensus was maintained across both rounds that this is a poor item. 26% of round one and 19% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 20: Is the nature of this job expected to change over the coming year?

Consensus: Consensus was maintained across both rounds that this is a poor item. 22% of round one and 19% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 21: How would you describe the support of your supervisor?

Consensus: Maintained across both rounds as important at 89% and 90%

Recommendation:

☒ Item maintained within the assessment

Question 22: How would you describe the general support from co-workers?

Consensus: Increased across rounds from 73% to 95% of participants rating it as a 6 or 7

Recommendation:

☒ Item maintained within the assessment

Question 23: Have you witnessed negative comments or behaviours towards or about people with mental illness in your workplace?

Consensus: Maintained across both rounds as important at 93% and 85%

Recommendation:

☒ Item maintained within the assessment

Question 24: How well do you believe that your company keeps personal matters confidential?
Consensus: Maintained across both rounds as important at 78% and 79%

Recommendation:

☒ Item maintained within the assessment

Question 25: Rate the resources and extended benefits available through your workplace for stress related issues?

Consensus: Participants increased their consensus that this is a poor item from 4% in round one to 48% in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 26: Is there a formal and timely process for performance appraisals?

Consensus: Consensus was maintained across both rounds that this is a poor item. 26% of round one and 14% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 27: What is your exposure to distracting stimuli?

Consensus: Consensus was maintained across both rounds that this is a poor item. 37% of round one and 33% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 28: Do you have access to some space for yourself?

Consensus: Consensus was maintained across both rounds that this is a poor item. 15% of round one and 19% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 29: Have there ever been episodes of violence in this workplace?

Consensus: Maintained across both rounds as important at 89% and 80%

Recommendation:

☒ Item maintained within the assessment

Question 30: How would you describe the physical environment that you work in?

Consensus: Consensus was maintained and strengthened across both rounds that this is a poor item.19% of round one and 48% of round two rated this item at a 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Occupation:

Question 31: Do you regularly work the overnight shift?

Consensus: No consensus was achieved to identify this as a strong item or a poor item. Only 65% of participants in round two rated this item at a 6 or 7. Consensus was reduced from 19% to 5% of participants that rated this item at a 4 or lower.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 32: Do you receive clear instructions and information concerning your work?

Consensus: No consensus was achieved to identify this as a strong item or a poor item. Only 65% of participants in round two rated this item at a 6 or 7. Consensus was reduced from 15% to 0% of participants that rated this item at a 4 or lower.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 33: Do you face deadline pressure?

Consensus: Consensus that this item is a poor item was achieved in round two with an increase from 7% to 19%.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 34: How often do you find you have nothing to do?

Consensus: Consensus was maintained across both rounds that this is a poor item, receiving 48% and 33% or ratings below a score of 4.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 35: What percentage of time are job tasks performed repetitively or routinely?

Consensus: Consensus was maintained across both rounds that this is a poor item, receiving 37% and 28% or ratings below a score of 4.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 36: Are there unpredictable/unexpected changes (e.g. schedule, tasks, and or knowledge)?

Consensus: No consensus was achieved to identify this as a strong item or a poor item. Only 45% of participants in round two rated this item at a 6 or 7. Only 5% of participants rated this item at a 4 or lower.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 37: Is performance of multiple tasks required?

Consensus: Consensus was maintained and strengthened across both rounds that this is a poor item. 22% of participants in round one rated this item at a 4 or lower and this rating increased to 42% in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 38: What percentage of the time does this job requires solitary work?

Consensus: Consensus was maintained across both rounds that this is a poor item. 48% of participants in round one rated this item at a 4 or lower and 38% in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 39: Rate the amount of control you have over your job

Consensus: Maintained across both rounds as important at 81% and 85%

Recommendation:

☒ Item maintained within the assessment

Question 40: How much exposure do you have to emotionally distressed situations or individuals?

Consensus: Maintained across both rounds as important at 89% and 80%

Recommendation:

☒ Item maintained within the assessment

Question 41: How much exposure do you have to situations of conflict?

Consensus: Maintained across both rounds as important at 85% and 80%

Recommendation:

☒ Item maintained within the assessment

Question 42: What degree of supervision do you exercise?

Consensus: No consensus was achieved to identify this item as a strong or a poor item. Only 40% of participants in round two rated this item 6 or 7 and only 9% of participants rated it at a 4 or lower.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 43: What degree of responsibility and accountability is required?

Consensus: Consensus was maintained across both rounds that this is a poor item. 11% of participants in round one rated this item at a 4 or lower and 19% in round two.

Issues related to wording

☒ Not clearly linked to research or risk factors

Issues related to fit

☒ No longer a risk factor suitable for this assessment

Recommendation:

☒ Eliminate from assessment

Question 44: What percentage of your job requires taking care of others physically or emotionally?

Consensus: Consensus was achieved to identify this item as a poor item with 15% and 10% of participants rating this item at a 4 or lower. However, consistently across both rounds 70% of participants identified this item as a strong item.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 45: Does this job have an inherent risk of violence or exposure to traumatic events (e.g. injuries or deaths)?

Consensus: Maintained across both rounds as important at 93% and 85%

Recommendation:

☒ Item maintained within the assessment

Additional items:

Question 46: How would you describe your commute?

Consensus: This item was identified as a poor item within round two with 10% of participants rating it 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Eliminate from assessment

Question 47: How much connection do you have to your work via technology (e.g. pagers, blackberry etc.)?

Consensus: This item was identified as a poor item within round two with 23% of participants rating it 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Question 48: Is your performance at work impacted by external responsibilities (e.g. daycare, domestic pressures)?

Consensus: achieved consensus with 80% rating as important in round two

Recommendation:

☒ Item maintained within the assessment

Question 49: have you experienced any sudden changes at work in the following areas: attendance, mood, work performance, social interaction?

Consensus: achieved consensus with 90% rating 6 or 7 in round two

Recommendation:

☒ Item maintained within the assessment

Question 50: On average, how much overtime do you work each week?

Consensus: achieved, 75% rated a 6 or 7 in round two

Recommendation:

☒ Item maintained within the assessment

Question 51: Are you exposed to alcohol, drugs or gambling in the workplace?

Consensus: Achieved within round two that this is a poor item with 10% of participants rating it 4 or below.

Issues related to wording

☒ Not clearly linked to research or risk factors

Recommendation:

☒ Re-word

Appendix E presents the new wording for the 23 items that were deemed a concern. Changes in the wording relate to either contextualizing the item to fit within the workplace and/or to relate the item more closely to an established mental health risk factor. Key issues were more clearly identified through the re-wording of 23 items and on five occasions, the issue was already addressed in another item therefore these items were deemed redundant.

Item # 6 "How would you rate the confidence in your job skills" was re-worded to make the link with the issue of anxiety. The issue of anxiety in the workplace is already

addressed within item # 11 therefore item #6 was eliminated. Through the re-wording of items #19 "How has the nature of your job changed over the past year" and #20 "Is the nature of your job expected to change over the coming year" it was clear that the issue being addressed was job insecurity. This issue is already acknowledged in item #18. Therefore items # 19 and # 20 were eliminated. Item # 36 "Are there unpredictable/unexpected changes (e.g. schedule, tasks, and or knowledge)" also became linked to the issue of control when re-worded and therefore item #36 was eliminated.

Within the round two questionnaire, item # 50 was added regarding overwork in order to clarify identified confusion with item # 10 "Do you work your required (or agreed upon) hours". As expected, during the re-wording of item #10 it became clear that both item #10 and item #50 addressed the issue of over work. Therefore item #10 was eliminated due to redundancy.

The following is the list of the 36 items (original and revised) that will remain in the WMHRA at this time.

Person

1. Does this employee exhibit difficulties with memory that impact work performance?
2. Does this employee exhibit difficulties with concentration that impact work performance?
3. Does this employee exhibit difficulties making decisions at work?
4. Does this employee have any health problems that impact work performance?
5. Do sleep disturbances interfere with this employee's job performance?
6. Has there been a deterioration of work performance over the past six months?

7 Has there been an increase of absenteeism over the past six months?

8 Does this employee work without taking regular breaks?

9. Does this employee work more hours each week than the job description requires?

10. Does anxiety interfere with work performance or the ability to relate to people in the workplace?

11. Has this employee's interaction with others at work changed within the past six months?

12. Have there been any acts of aggression towards others within the workplace over the past six months?

13. Is this employee's work performance impacted by external responsibilities (e.g. daycare, domestic pressures etc.)?

14. Have there been any sudden changes at work in the following areas: attendance, mood, work performance, social interaction?

Environment/work culture

15. Are there negative interpersonal relations at this workplace e.g. gossip, backstabbing?

16. Is there a lack of recognition (e.g. good pay, verbal recognition, rewards, and/or promotion) in this organization?

17. Have recent changes within this organization raised concerns about job security?

18. Do supervisors lack in offering healthy support?

19. Do co-workers lack provision of practical or emotional support to one another?

20. Do people in this workplace express negative comments or behaviours towards or about people with a mental illness?
21. Have there been experiences in this organization where employee's personal matters are not kept confidential?
22. Does this workplace lack in available resources and supports for stress related issues?
23. Does this organization lack provision of formal feedback and acknowledgement regarding one's work performance?
24. Do distractions (i.e. visual or auditory) in this workplace interfere with work performance?
25. Are the physical surroundings in this organization restricting (e.g. cramped or lacking in privacy)?
26. Is the physical environment in the workplace unhealthy (i.e. noisy, dirty, cluttered, cramped, exposure to hazardous materials)?
27. Have there ever been episodes of violence or bullying in this workplace?
28. Do workplace peers engage in addictive behaviours such as using alcohol, drugs or gambling during work hours?

Occupation

29. Does this job require working the overnight shift?
30. Does this job impose intense demands in the form of deadlines?
31. Does this position lack control over daily choices or responsibilities?
32. Does this job involve exposure to emotionally distressed situations or individuals?

33. Does this job involve exposure to situations of conflict?
34. Does this job require caring for the physical or emotional needs of others?
35. Does this job have an inherent risk of violence or exposure to traumatic events (e.g. injuries or death)?
36. Do the work demands of this job extend past regular work hours due to technology (e.g. pagers, blackberries, etc.)?

4.3 Summary of findings

Data from five expert groups provided valuable information regarding the content validity of the items currently within the WMHRA. Focus groups generated six additional items to add to the questionnaire to be scored within round two (identified in Table 6). Consensus was achieved for numerous items resulting in 18 items being maintained within the tool and 10 items being eliminated. For 23 items, re-wording was considered essential to link them more strongly with either the workplace context or with identified psychosocial risk factors. Redundancies were detected through the process of re-wording items which led to the elimination of five additional items. At the completion of this analysis process 36 items were deemed important enough to remain in this tool for further investigation.

The following chapter will provide a discussion regarding these findings in relation to the literature as well as with the perspective of risk measurement guiding this tool development. Limitation and strengths of this study will be mentioned along with the need for future research.

CHAPTER FIVE

This chapter discusses the research results in relation to the literature, theoretical models and/or current assessment tools. Information will be shared on the consensus achieved in this research regarding items within the Workplace Mental Health Risk Assessment (WMHRA). Findings led to numerous items being maintained within the tool and others being eliminated. This discussion will elaborate on the relationship between the items that achieved consensus and a variety of literature that supports decisions made. Support will be provided from empirical literature, grey literature e.g. documents from associations, and articles discussing theoretical models or assessment tools. Items will also be discussed in terms of their fit with the post-positivist perspective of risk measurement guiding the WMHRA design. New considerations will be introduced for the application of the WMHRA within a workplace organization. Lastly, limitations and strengths of this study will be clearly outlined followed by suggestions for future research necessary to progress with development of this tool.

5.1 Implications for item validation

Expert opinion was gathered on 51 items in the WMHRA using the Delphi method. From this point forward in the discussion, the term *research participants* will be used to identify these experts. Consensus was achieved on 41 items, 18 of which were maintained and 10 of which were eliminated. Less than half (23/51) of the items were identified as needing to be re-worded to contextualize the item to the workplace or to more clearly link it with a psychosocial risk factor. Following the re-wording of items, it was decided that due to redundancy, five additional items were eliminated. Therefore, at this stage in the content validation process, 36 items were maintained within the

WMHRA and were outlined at the end of the findings section. See Appendix F for a summary of all original items and their outcome. Items in each category are elaborated on that received consensus to be maintained or consensus as a poor item that led to elimination. Following this information, reworded items will be presented, their relevance to the literature explored, and steps for further examination identified.

5.1.1 Person category

Within the person category the following six items reached consensus that supported their inclusion in the WMHRA (75% or more of participants rated items at 6-7): #5 sleep; # 11 anxiety; #12 changes in social interaction; # 48 impact of external pressures; item #49 sudden changes in behaviours and; # 50 overwork. For two items consensus was reached that identified them as being a poor fit for the WMHRA (10% or more of participants rated items a 4 or less), these were eliminated: # 13 avoiding conflict and; #15 exposure to trauma.

5.1.1.1 Person items maintained

Item #5 regarding sleep was identified by participants as an important risk factor indicating psychosocial concerns. This finding is consistent with the diagnostic criteria and current assessment tools that link sleep disturbance with depression (American Psychiatric Association, 1994; Beck, Steer & Brown, 1996). These authors indicate that a typical sign of depression is excessive sleep or too little sleep. To keep this item measurable in the workplace, it has been re-worded slightly to: Do sleep disturbances interfere with this employee's job performance?

Item # 11 related to experiencing anxiety, reached a level of consensus that supported it to be maintained within the WMHRA. These findings concur with grey literature and

diagnostic criteria that elaborate that anxiety is a psychosocial risk factor (American Psychiatric Association, 1994; CMHA, 2004; CPRF, 2007). To keep this item as an observable measurable entity in the workplace, it has been reworded to some extent to: Does anxiety interfere with work performance or the ability to relate to people in the workplace?

Item #12: Change in one's social interaction, received agreement between participant responses and current assessment tools and grey literature that it is a psychosocial risk factor. This item is related to difficulties with anxiety and depression (Beck, Epstein, Brown & Steer, 1988; CMHA, 2004: CPRF, 2007). To keep this item fitting with the post-positivist perspective, it has had minimal re-wording to now read: Has this employee's interaction with others changes within the past six months?

Item # 48: Is your performance at work impacted by external responsibilities (e.g. daycare, domestic pressures), is an item that achieved consensus as important within the person category but was not identified as a risk factor through the initial literature review. This item was added to the tool in round two of the Delphi method due to suggestions from participants. To seek out whether or not support exists for inclusion of this item, literature was consulted as outlined in the following section.

External responsibilities are linked with the concept of work-family conflict. This concept is discussed throughout the literature as impacting on psychosocial well being (Hammer, Saksvik, Nytro & Torvatn, 2004; Hammig, Gutzwiller & Bauer, 2009). For instance, work-life conflict is described as occurring when the "demands of participating in one domain are incompatible with the demands of participating in another" (Hammig et al, 2007, p 435). These authors describe that it is the attempts to carry out the tasks

associated with one role that interfere with the accomplishment of tasks in the other. This conflict commonly arises due to issues such as overwork, variable schedules, job insecurity, child care, and household responsibilities (Hammer et al.,; 2004: Hammig et al., 2009). Work-life conflict and health issues are correlated with anxiety, depression, addictions and burnout (Hammer et al., 2004; Hammig et al., 2009).

Including new items in the WMHRA requires that items are consistent with the identification of risk and that the item is observable. While external pressures may have a huge impact on the work performance of an employee it may not always be the case that external pressures could accurately be measured or observed by others within the workplace. For this reason, this item has been slightly re-worded to: Is this employee's work performance impacted by external responsibilities (e.g. daycare, domestic pressures etc.)? This item will require additional study for coherence with the WMHRA. For instance, a qualitative study may be beneficial to investigate how external pressures are manifested in the workplace through behaviour or communication.

Item #49 regarding sudden changes in behaviours such as absenteeism, work performance, and social interaction achieved consensus to maintain this item within the WMHRA. This item was also added to the WMHRA during the second round of this research process. Unlike the previous item discussed, consensus for maintaining this item within the risk assessment is supported by articles and diagnostic criteria explored during the initial design of this tool (American Psychiatric Association, 1994; Beck, Steer & Brown, 1996; CPRF, 2007). These authors indicated that depression and/or anxiety may be exhibited in the workplace through behavioural changes such as increased absenteeism, reduced work performance, isolation and increased irritability. For this item

to be measurable, it now reads: Have there been any sudden changes at work in the following areas: attendance, mood, work performance, social interaction?

Item # 50: Overwork, achieved consensus among study participants that it is an important psychosocial risk factor and should be maintained. This finding is consistent with two very influential models that suggest that high demands or effort required in an occupation are linked with psychosocial risk (Karasek, 1979; Karasek et al, 1998; Siegrist, 2005). To maintain consistency with the post-positivist perspective, this item has been amended to: Does this employee work more hours each week than the job description?

5.1.1.2 Person items eliminated

Within the person category the following two items achieved consensus as a poor item for the WMHRA: #13 identifies the risk factor of avoiding situations of conflict and # 15 targets the history of witnessing a traumatic event. While grey literature and literature reviews support these items as either a sign of poor mental health or a risk factor influencing one's mental health (CMHA, 2004; CPRF, 2007; McFarlane & Bryant, 2007; Wilhelm et., al., 2004) the lack of consensus from participants in this study led to further reflection on the intent of the tool and the congruence of these items with the perspective of risk measurement held by this author.

During this research, awareness was gained regarding the theoretical perspective that influences the design and development of the WMHRA. Being unaware initially of the existence of post-positivist or constructivist perspectives, the tool was developed with little regard to what might fit cohesively with the purpose of the tool. Once clarity was achieved about the desire to create a tool guided by a post-positivist perspective of risk

measurement, conflict rose on some of the items initially included. Reviewing the items with this perspective helped to focus the tool and the criteria used to develop it. Thus, items chosen for this tool need to be concrete, observable entities rather than issues left to personal interpretation or reflection. Further to this, for items to serve as a risk assessment applicable for the workplace, there is a need for items to reflect workplace performance or workplace issues rather than simply identifying illness symptoms.

Item # 13 linked with avoiding conflict is an item that reflects the concerns mentioned above on the design of the tool. Documentation in the grey literature and within diagnostic criteria (American Psychiatric Association, 1994; CMHA, 2007; CPRF, 2007) suggests that avoiding others and struggling with conflict is an illness symptom. However, there is no empirical literature to support that avoiding conflict in itself is a risk factor that impacts one's mental health or workplace performance. Given the findings identifying this item as poor, its lack of coherence with the revised perspective of this tool and the lack of supportive evidence for this item as a risk factor, it was eliminated from the WMHRA.

Item #15 regarding witnessing a traumatic event is another risk factor that several authors indicated has a negative influence on one's mental health (MacFarlane & Bryant, 2007; Wilhelm et al., 2004). However, as worded in item #15 the traumatic event is not particular to a workplace experience nor does it necessarily have an impact on one's workplace performance. To frame items in a way that is consistent with the post-positivist perspective of risk measurement, it is important that items are observable in and related to the workplace. Consensus was reached by participants that supported rating this item as poor; therefore, with a lack of fit with the overall perspective for measuring risk

this item was eliminated from the person category. The risk factor of exposure to violence or trauma was also scored within the workplace environment/culture and occupation categories of the WMHRA and will be discussed in the following sections.

In summary, within the person category, eight items achieved consensus from research participants. Six items were identified by participants as important to maintain in the WMHRA and these findings were supported by literature. Two items achieved consensus as poor items and lacked support as psychosocial risk factors within a workplace risk assessment and were therefore eliminated.

5.1.2 Workplace environment/culture

Numerous items within the environment/culture category attained consensus through the Delphi method. The following eight items reached consensus supporting that they were important and that they be maintained within the tool: # 16 interpersonal relationships; #17 employee recognition; # 18 job security; # 21 supervisory support; #22 co-worker support; # 23 stigma; #24 confidentiality and; # 29 violence at work.

5.1.2.1 Workplace environment/culture items maintained

Three of the above items (#16 interpersonal relationships, # 21 supervisory support, #22 co-worker support) focus in slightly different ways on the concept of interpersonal support in the workplace. Findings from this study are consistent with that of empirical literature (Cowls & Galloway, 2009) and the Demand-Support-Control Model (Karasek et al, 1998) that emphasizes how a lack of support in the workplace puts mental health at risk. To increase the link with the psychosocial risk factor and to allow for others to measure these items, they were re-worded minimally in the following way. #16: Are there negative interpersonal relations at your workplace e.g. gossip, backstabbing? #21:

Do supervisors in this workplace lack in offering healthy support? #22: Do co-workers lack provision of practical or emotional support to one another?

Two items within this category (# 23 stigma, #24 confidentiality) are linked in terms of their connection to stigma and disclosure of mental illness in the workplace. Inclusion of these two items was supported through both this research process as well as within the literature. For instance, stigma and a lack of confidentiality contribute to an unhealthy workplace culture that may place employees at risk for developing or worsening mental health issues (Clair et al., 2005; Hatchard, 2008). Replacing words such as "you" or "your" within these two questions led to creating more observable risk factors. Therefore they now read: #23: Do people in this workplace express negative comments or behaviours towards or about people with a mental illness? #24: Have there been experiences in this organization where employee's personal matters are not kept confidential?

The Effort-Reward Imbalance model underscores support for item #17 of employee recognition (Siegrist, 2005). Risk to psychosocial wellbeing is increased when an employee puts out a great deal of effort in the workplace while receiving little in the way of reward (Siegrist, 2005). Consensus from participants on this item further underscores the importance of this item for inclusion within the WMHRA. Slight re-wording took place to ensure that this item is measurable in the workplace. It now reads: Is there a lack of recognition (e.g. good pay, verbal recognition, rewards, and/or promotion) in this organization?

Worrying about job security is the focus of item #18. Findings from this study concur with the literature that thoughts of job insecurity have a negative impact on one's mental

health (D'Souza et al., 2003). Initial wording suggested requiring the employee's perspective; therefore small changes were made to create an observable item able to be scored by many people in the workplace. This item now reads: Have recent changes within this organization raised concerns about job security?

The final item in this category that reached consensus as an important item is # 29, that of violence and bullying in the workplace. This item differs from # 15 which was eliminated from the person category as the focus here is on violence or trauma that occurs in the workplace rather than in one's personal life. The perspective behind the design of the WMHRA is to measure risk that is observable in the workplace. Literature reviews provided by several authors suggest that when one is exposed to violence or trauma in the workplace, there is a much greater risk for mental health disorders such as depression and Post- traumatic Stress Disorder (McFarlane & Bryant, 2007; Wilhelm et al., 2004). Consistency across these articles and the findings from this research validates the need to include this item within workplace environment/culture category of the WMHRA.

Within the workplace environment/culture domain of the WMHRA, eight items received consensus from research participants as important to maintain. Theses items were also sufficiently supported by literature and therefore all of these items remain in the present version of the WMHRA. No items were eliminated from this category.

5.1.3 Occupation

In this category many items reached consensus as important and as poor items. The following four items were deemed important by participants in this study: #39 control, #40 exposure to emotionally distressing situations or people, #41 exposure to conflict and #45 exposure to violence or trauma. Item #45 addresses a similar risk factor to item #29

however, the difference is that item #29 addresses the risk of having violence or trauma in the workplace in general (e.g. a clerk working in a police unit may witness violence) while item #45 targets the risk of working in an occupation that requires exposure or management of violence or trauma (e.g. a police officer). There was consensus that eight items in this category were a poor fit with the WMHRA: # 32 clear instructions; #34 boredom; #35 job repetition and routine; # 37 multitasking; #38 solitary work; # 42 supervision exercised; #43 responsibility and accountability and; #46 commute. The outcome for each of these items will be presented in terms of support from literature as well as fit with the perspective of risk measurement used within the WMHRA.

5.1.3.1 Occupation items maintained

The Demand-Control-Support Model (Karasek et al, 1998; Karasek, 1979) supports the relevance of control as a risk factor consistent with item # 39. Both this theoretical model and the study findings validate the importance of maintaining this item within the WMHRA. To maintain consistency with the post-positivist perspective of risk measurement, this item was reworded slightly to the following: Does this position lack control over daily choices or responsibilities?

Items # 40 exposure to emotionally distressing situations or people, #41 exposure to conflict, and #45 exposure to violence or trauma have a common theme related to the risk of being exposed to distressing/unhealthy situations. All of these items reached consensus from participants as being important items to maintain within the risk assessment. Several authors and papers on assessment tools support these findings (Cowls & Galloway, 2009; McFarlane & Bryant, 2007; Raybould et al., 2001; Wilhelm et al., 2004). The first two items were initially worded to be scored by the employee, therefore in keeping with the

need to have measurable risk factors, these items were re-worded minimally to the following: #40 Does this job involve exposure to emotionally distressed situations or individuals? #41 Does this job involve exposure to situations of conflict?

5.1.3.2 Occupation items eliminated

Many of the items within the occupation category are tasks that may be cognitively challenging for a person with depression or anxiety to perform (Raybould, 2001). However, when comparing items in this category with the purpose of the tool i.e. measuring the risk within an occupation that contributes to mental illness, conflict developed. For example, item # 35 highlighted the concern of an occupation that involves a high level of routine or repetition. The reality of having routine and repetition in one's occupation may be difficult for someone with depression to return to after a disability leave; however the literature does not support this as a risk factor leading to poor mental health in itself. With a post-positivist perspective of risk measurement, items need to be concrete and observable and they need to represent the causal relationship between the item itself and risk to one's psychosocial well being (Lupton, 1999). Items within the occupation category will be viewed in the WMHRA as appropriate only if they focus on factors that independently have the potential to cause risk to one's mental health. Therefore, this lack of support from the literature along with the findings from this study led to the elimination of all of the following items: # 32 clear instructions, #34 boredom, #35 job repetition and routine, # 37 multitasking, #38 solitary work, # 42 supervision exercised, #43 responsibility and accountability, and #46 commute.

In summary, the occupation category of the WMHRA achieved consensus with 12 of the items. Both research participants and the literature supported the inclusion of four

items. Eight items were identified as a poor fit for this tool by research participants. These items lacked adequate support from the literature to be maintained in the tool as psychosocial risk factors, therefore they were all eliminated.

5.1.4 Reworded Items

Through the data analysis phase of this research, numerous items were deemed in need of re-wording. Seven items within the second round of the Delphi method did not reach consensus to be maintained in the tool. For 16 other items consensus was achieved identifying these items as a poor fit for the WMHRA. Despite the lack of support by participants, empirical literature, grey literature, theoretical models and existing tools provide an indication that all of these items are linked with psychosocial risk. This literature and the new perspective used to develop this tool will be used to support the rewording of these items. Five items were identified as redundant following rewording (#6 confidence in job skills, #10 overwork, #19 changes in job in last year, #20 changes in job in upcoming year, and # 36 unpredictable/unexpected changes in job). Therefore, only the following 18 reworded items will be discussed in this section: #1 memory; #2 concentration; #3 decision making; #4 physical health; #9 overwork; # 14 aggression or irritability; # 7 attendance; # 8 work performance; #25 benefits and resources; #26 performance review; #27 distracting stimuli; #28 access to private space; # 30 the quality of the physical environment; #31 shift work; #33 deadline pressures; #44 care giving; #47 use of technology outside of work and; #51 drugs and alcohol in the workplace.

5.1.4.1 Changes in perspective that influenced re-wording

The process of re-wording items was influenced by changes in perspective about the tool design. The first change in perspective influenced the view of how items should be

worded in the person category. Initially items were generated through literature search and review of currently existing tools. Using the PEO model (Law et al., 1996) as a framework, items were originally sought that were applicable to each domain. However, upon review of the tool and its criteria, this author developed concerns with items in the person domain related to an inconsistency of observable behaviours in the workplace and a lack of a clear link to psychosocial risk factors. For example, within the person category in this tool, several items that were chosen focused on clinical signs of depression or anxiety such as poor memory, poor sleep, and poor concentration. As initially worded, most signs were not observable in the workplace by others or by untrained observers. Myette (2008) and Service (2004) suggested that people often deny and avoid identifying any mental health issues to themselves or others. Given this knowledge, items in the person category need to be factors linked to psychosocial risk that are demonstrated as problematic within the workplace context.

Wording the person category items in an observable manner may increase the efficacy of this tool by providing the opportunity for others in the workplace to play a role in detecting and preventing illness (Dewa et al,, 2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999; Vezina, et.al., 2004). Feedback from participants during the Delphi process appeared consistent with these concerns as most items that identified illness symptoms received consensus as a poor fit for inclusion in a workplace risk assessment. Within the person category only six items received consensus as important risk factors (#5 sleep; # 11 anxiety; #12 changes in social interaction; # 48 impact of external pressures; #49 sudden changes in behaviours and; # 50 overwork). These findings facilitated important re-wording of ten of the person category items (see Appendix E).

The second change in perspective related to the vision of how this tool may be applied in the workplace. Initially the WMHRA was developed with the idea that it could be initiated by several people such as the employee, supervisor or HR personnel. However, many of the initial questions in the WMHRA could only be answered accurately by the employee. Upon reflection, it is believed that the WMHRA will be most effective if all items are observable workplace behaviours or demands that can be accurately scored by an employee, supervisors or other workplace personnel such as HR or occupational health workers. The application of this risk assessment marks an important departure from that of other tools appraised in this thesis. Involvement of others in the detection of psychosocial risk factors at work was identified in the literature as a strategy to enhance primary prevention of mental illness in the workplace (Dewa et al.,2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999, Vezina, et.al. 2004). Given this current view, all items, including those that achieved consensus to be maintained were subject to re-wording to be consistent with this approach to risk measurement.

The final change of perspective influenced the manner in which the Person Environment Occupation Model (PEO) (Law et. al., 1996) is applied in the WMHRA. This model emphasizes the need to be aware of all three domains, their interaction with one another and their impact on occupational performance (Law et. al., 1996). As a result of changes in perspective mentioned above, a shift has occurred in how the PEO framework is applied to the WMHRA. The current design of this tool includes the assessment of all three domains of person, environment and occupation; however the overall focus is contextualized to the workplace. As mentioned above, within the person category boundaries are in place on factors that may be considered as coherent for this

type of assessment. Factors such as illness or external pressures will only be considered if they are observable in the workplace through the impact they have on the employee. Many tools that were appraised in this thesis offered an individual focused approach to measurement. Focusing on the individual may impact the information obtained from employees due to self-report bias (Razavi, 2001) or may limit the timing or amount of information obtained due to the narrow focus.

5.1.4.2 Re-worded items in the person category

Within the person category, five items were identified as requiring re-wording as they all relate to illness symptoms: #1 memory, #2 concentration, #3 decision making, #4 physical health, and # 14 aggression or irritability. Diagnostic criteria, grey literature, and current assessment tools consistently associate these items with mental health issues (American Psychiatric Association, 1994; Beck, Epstein, Brown & Steer, 1988; Beck, Steer & Brown, 1996; CMHA, 2004; CPRF, 2007; Raybould et al., 2001). The rewording of these items focused on illustrating a clear connection between illness symptoms and their impact on workplace performance. The following are the reworded items: #1 Does this employee exhibit difficulty with memory that impacts work performance? # 2 Does this employee exhibit difficulty with concentration that impacts work performance? #3 Does this employee have difficulty making decisions at work? #4 Does this employee have any health problems that impact work performance? #14 Have there been acts of aggression towards others within the workplace in the past six months?

Documents offered by the CMHA (2004) and the CPRF (2007) indicate that changes in one's attendance or work performance in a negative manner may be an indication that one is struggling with a mental illness. These issues are addressed in item # 7 attendance

and # 8 work performance and were scored as very important by 70% of the participants. While these items approached consensus this rating was considered insufficient for achieving item consensus. Initial wording of these items implied a need simply to explore one's work performance and attendance. Re-wording of these items aimed at reframing the wording to demonstrate the negative impact these risk factors may have on the workplace to fit with the perspective of the tool design. Re-wording for each item is the following: # 7 Has there been a deterioration of work performance over the past six months? #8 Has there been an increase of absenteeism over the past six months?

Working without breaks or working overtime are behaviours indicated in the literature and within theoretical models as risk factors impacting one's mental health (CMHA, 2004; Cowls & Galloway, 2009; CPRF, 2007; Karasek, 1979; Karasek et al, 1998; Siegrist, 2005). Item # 9 addresses this issue of overwork; however the initial wording did not clearly articulate this concern. Re-wording of this item focuses on clarifying the risk factor of overwork through the workplace behaviour of working through breaks. Item # 9 has been re-worded as: Does this employee work without taking regular breaks?

5.1.4.3 Re-worded items in the environment/culture category

Item # 25 was intended to address factors about available supports in the workplace for employees who may be struggling with poor mental health. Lack of available supports is defined as a psychosocial risk factor (Cowls & Galloway, 2009; Karasek, 1979). Initial wording of this item implies seeking information on the availability of resources and does not indicate the risk related to lack of supports. New wording of this item articulates this concern: Is there a lack of recognition (e.g. good pay, verbal recognition, rewards, and/or promotion) in this organization?

The model of Effort Reward Imbalance by Siegrist (2005) outlines the psychosocial risk factor of lack of reward for employees in the workplace. Reward may come in a variety of forms such as pay, promotion, praise or feedback. This model underscores the need for recognition, feedback and praise within regular performance reviews consistent with item #26 performance review. The risk factor of lack of acknowledgement or praise in the workplace was not clearly identified in the initial wording of this item and was a focus of the following re-wording: Does this organization lack provision of formal feedback and acknowledgement regarding one's work performance?

Three items within the workplace environment category are clustered together in this section as they all aim to address factors within the physical environment of the workplace: #27 distracting stimuli, #28 access to private space, and # 30 the quality of the physical environment as a whole. All of these items reached consensus as poor items for the WMHRA, yet the literature supports these items as risk factors. For instance, human factors literature regarding the built environment demonstrates that poor lighting, noise, crowding, and lack of freedom to move or access free space, impairs one's mental health (Costa, 1996; Evans, 2003). The following re-wording of these items aimed to link the risk factor of an unhealthy physical environment with a negative impact on one's workplace performance and mental health: #27 Do distractions (i.e. visual or auditory) in this workplace interfere with work performance? #28 Are the physical surroundings in this organization restricting (e.g. cramped or lacking in privacy)? #30 Is the physical environment in the workplace unhealthy (i.e. noisy, dirty, cluttered, cramped, exposure to hazardous materials)?

The risk factor of exposure to addictions was highlighted in item #51 when considering one's exposure to drugs, alcohol and gambling in the workplace. This is another new item that was suggested during the second round of the Delphi method. Therefore, the literature was consulted to explore possible support for inclusion of this item.

There is a significant presence of drugs and alcohol in the workplace (Frone, 2008). This author elaborates that alcohol is present in 15 percent of US workplaces and drugs may be present in up to 28 percent of workplaces. Having access to substances in the workplace may seem like an obvious risk for those already diagnosed with an addiction or mental health issue; however Frone (2009) suggests that it is also risky for other employees. Research conducted by Frone (2009) found that work environments that contained drugs or alcohol or cultures that permitted this type of addictive behaviour experienced greater work strain and decreased morale. Further exploration is required into the impact on one's mental health related to the presence of drugs, alcohol and gambling in the workplace for it to be included in the final version of this risk assessment. The following re-wording of item # 51 intends to identify more clearly the psychosocial risk of addictive behaviours: Do workplace peers engage in addictive behaviours such as using alcohol, drugs or gambling during work hours?

5.1.4.4 Re-worded items in the occupation category

Shift work is addressed in item #31 which is documented in the literature as a psychosocial risk factor (Bara & Arber, 2009; Costa, 1996). Bara and Arber (2009) conducted a study over a period of ten years from 1995 to 2005 exploring the impact of shift work on mental health. Findings from this research and others indicate that shift

work, especially the overnight shift is linked to increased prevalence of anxiety and depression (Bara & Arber, 2009; Costa, 1996). This item did not achieve consensus as only 65% of participants rated it as very important. Given the literature support and the fit with the perspective of this tool design, this item was kept within the WMHRA and will undergo further examination with the following re-wording: Does this job require working the overnight shift?

Deadline pressure is identified as a risk factor in item #33 of the WMHRA. Inclusion of this item is reinforced by theoretical models that emphasize the relationship between the demand or effort required by an employee in their job to psychosocial wellbeing (Karasek, 1979; Karasek et al., 1998; Siegrist, 2005). The following rewording aimed to reflect the risk factor of intense job demands: Does this job impose intense demands in the form of deadlines?

The risk factor of care giving for others was highlighted in the rewording of item #44. Care giving is identified in literature reviews as an occupation that requires enormous amounts of empathy and emotional energy which takes its toll on the health of the provider (Sabo, 2008; Wilhelm et al., 2004). This factor also presents risk to one's psychosocial wellbeing in that through focusing on the needs of others, health care professionals may neglect their own needs (Cowls & Galloway, 2009). To better reflect the risk in this item as well as the perspective of risk measurement used for the WMHRA # 44 has been reworded to: Does this job require caring for the physical or emotional needs of others?

Item # 47 introduces the use of technology such as blackberries and pagers outside of work hours. Extending one's work day through the use of technology sheds light on the

risk factor of work-life conflict. This is a new item introduced during the course of the research. A brief literature review was conducted to find out if this item is supported in current literature. As identified with item # 48 related to external pressures, research has demonstrated that work-life conflict has a negative impact on one's psychosocial well being (Hammer et al., 2004; Hammig et al., 2009). Hammer et al. (2004) proposed that Karasek's Demand-Control-Support Model (Karasek et al., 1998;) was too narrow and that the additional psychosocial risk factor of work-life conflict is essential to consider. Through research, these authors suggest that if the norms or culture of a workplace encourage behaviours that contribute to work-life conflict, an increase of mental health issues such as anxiety, depression, addictions and burnout may be the result (Hammer et al., 2004; Hammig et al., 2009). The following re-wording of item # 47 aimed to reflect the risk of work-life conflict that was supported in the literature: Do the work demands of this job extend past regular work hours due to technology (e.g. pagers, blackberries, etc.)?

5.1.5 Summary of item validation

Empirical literature, theoretical models, grey literature, diagnostic criteria and current assessment tools provided information that was consistent with the findings in this study. Items that received consensus as important were supported by the literature and therefore were maintained in the WMHRA. Consensus was also achieved for many items identifying them as a poor fit for the assessment. Poor items that lacked sufficient coherence with the literature, or perspective of risk assessment for this tool were eliminated. The post-positivist perspective to risk assessment that guides this tool development has led to decisions about item inclusion. Items within the WMHRA need to

be concrete, measurable psychosocial risk factors that are contextualized to the workplace and observable by others.

Numerous items were identified through the Delphi method as concerning. Given that literature supported the inclusion of all of these items, re-wording was pursued to strengthen the validity of these items of concern. Further research will be necessary with these newly worded items as well as with items that were new additions to the WMHRA. At this point in the development process of the WMHRA, the findings have led to supporting the inclusion of 36 items.

5.2 Implications for application of the WMHRA

The WMHRA aims to measure risk factors that were identified through the literature and this study as most important to consider in terms of their impact on psychosocial well being. A comprehensive view of measurement is featured within the framework of the WMHRA as three key domains are addressed in relation to risk; the employee, the workplace environment/culture and the job duties. This framework differs from other tools reviewed in this thesis as many tools had a narrow focus of measurement or had identified gaps in their measurement of risk.

The manner in which the WMHRA may be applied offers an additional departure from other tools critiqued within this thesis. To augment primary prevention of mental health issues in the workplace, the WMHRA is designed to encourage initiation of using this tool by a variety of people in the workplace such as the employee, supervisor or HR personnel. This participatory approach to risk measurement is unique to the WMHRA and may promote increased accountability and responsibility by all workplace

stakeholders which is essential for managing mental health in the workplace (Dewa et al., 2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999; Vezina et al., 2004).

Encouraging others such as supervisors to be aware of risk factors within an employee may be helpful for improving primary prevention (Dewa et al., 2006; Glozier, 1998; Putnam & McKibbin, 2004; Schott, 1999); however this approach does bring forth some ethical considerations. Discomfort may arise from employees related to having their potential health concerns, especially psychosocial health, focused on by others at work. Given that mental illness is surrounded by stigma, many people fear the repercussions of disclosing a mental health issue in the workplace (Clair et al., 2005; Hatchard, 2008). These ethical concerns need to be explored more extensively in future research to determine strategies that may enhance comfort and acceptance of using such a risk assessment in the workplace.

This thesis focused on the validity of the WMHRA items; however it is important to note that this tool also differs from tools currently in use in terms of how the results are managed. Only one tool that was critically appraised proposes any recommendations to address concerns identified through the assessment process. Within the original design of the WMHRA, mitigation ideas were offered to help address risks identified. However, this study did not examine this aspect of the tool. Given the changes in perspective as well as changes within the items included in this tool, mitigation suggestions will need to be revisited. Ideas for managing each risk will need to be explored regarding coherence with prevention of risk as well as consistency with any new items included in the tool.

5.3 Limitations

The limitations in conducting this study are elaborated to support future research directions. Difficulties were encountered in this study with recruiting and sustaining the participation of expert raters for round one and round two of the Delphi method. Initial sampling for the worker category yielded no participants, thus the sampling strategy was altered to pursue graduate students who had previous work experience. Five participants were recruited using this strategy for the worker group. No participants for the HR group volunteered initially, therefore it was suggested by the HR director that a regular HR meeting time be offered for participants who were willing to participate in the study. This sampling strategy yielded 13 HR personnel.

Despite the above recruitment strategies, sustained participation in the study was limited due to the extended period of time that passed between the initial focus group in round one and the returning of completed questionnaires in round two. With two years of elapsed time for two of the expert groups, 15/16 of the participants dropped out. The reality of these drop outs led to excluding the quantitative data from16 participants from the supervisor and HR group. Therefore, the final number of participants was low and data were limited to only three expert groups; workers, occupational therapists and physicians.

Variation of participants was limited as participants within the worker sample were all from health professional backgrounds, similar to the other two expert groups. This limitation of homogeneity was further emphasized as the majority of participants were women. All participants recruited were from Southwestern Ontario which may limit their work related information to concerns typical to this area and workplace context.

The low number of participants and their lack of variety may have limited the perspective of information received during this initial validity process. It may be important for future research to gather information from additional participants with varied backgrounds in terms of occupations, gender and location within Canada. Expanding the sampling may provide valuable feedback regarding present items and may provide potentially different ideas for additional relevant items.

5.4 Future research implications

As identified by Streiner & Norman (2003), the next step in tool development involves piloting the WMHRA. This step will aim to gain further feedback on the relationship of the items with one another and with the construct of measuring psychosocial risk factors. A factor analysis will be needed to further test the risk assessment perspective of the items in the tool as well as conceptual clustering of items in this tool and to identify new clusters of relevant risk factors.

Given the ethical concerns that were identified, future qualitative research using focus groups may be beneficial to seek strategies for implementing the WMHRA in a society where stigma exists. Focus groups may also serve to gather additional information about the content validity and wording of new items and re-worded items.

5.5 Strengths

There are considerable emotional and financial costs related to poor mental health in the workplace and it is estimated that this picture will only get worse (Dewa et al., 2004; WHO, 1996). Given the persistent and cyclical nature of illnesses such as depression and anxiety (Bonde, 2008), primary prevention of the illnesses is of utmost importance to alter this destructive course (Kompier, 2004; Myette, 2008; Parent, 2004; Putnam &

McKibbin 2004; Sanderson & Andrews 2006). The WMHRA may afford organizations a comprehensive and concrete method to detect psychosocial risk factors at work in an effort to prevent illness. In its present form, the WMHRA contains only 36 items providing a relatively short and easy tool for use. Many other tools reviewed in this thesis have gaps in the areas that they measure and they are utilized after someone has already been identified as struggling with poor mental health.

Each item in the WMHRA is placed within the context of the workplace which provides an opportunity to spread the responsibility for identifying risk factors across many people at work. Many other tools currently in use require expert raters or rely on self-report which may be limiting. With this approach to risk measurement it is predicted that the WMHRA will potentially aid organizations to address concerns relevant to mental illness in the workplace despite the stigma and discomfort that surrounds this topic (Clair et al., 2005).

Mitigation ideas were not addressed within this study; however including this feature within the design of the WMHRA is a definite strength as this will provide direction for organizations to take related to each identified risk factor. Accurately measuring psychosocial risks in the workplace is important, however it is through offering proposals for change, that an organization has an opportunity to have a positive impact on employee health.

5.6 Summary

The development of the WMHRA began in 2005 as a response to increased disability leaves and a lack of ability for organizations to prevent this liability. Through literature review, tool critique and peer review, an initial draft of the WMHRA was developed. The

aim of this thesis was to validate the content of the items within the WMHRA. Information was sought in regards to these items using the Delphi method with five expert groups; HR personnel, supervisors, workers, OTs and physicians.

Consensus was achieved with 41 out of 51 of the items. For 18 items, there was a consensus to maintain them within the assessment. Consensus that an item was problematic was achieved for 23 items, 10 of which were subsequently eliminated. Re-wording was explored with 23 items that were identified as problematic and had concerns with either poor link to risk factors or lack of contextualization to the workplace. From participant feedback, four additional risk factors were added to the WMHRA. The final version of the assessment tool at this point includes 36 items.

The WMHRA offers two very different approaches to measuring risk that endeavor to enhance primary prevention of mental illness in the workplace. The first distinction from other tools is that this comprehensive framework is guided by the PEO model (Law et al., 1996) which assesses risk in the domains of the person, workplace environment/culture and demands of the occupation. This design offers a comprehensive approach to measuring risk in the workplace as compared to many currently available assessments that have gaps in the areas that they explore. For example, some tools may address risk factors within the employee or the job demands but neglect to explore the workplace culture. While several tools do address concerns related to the person domain, the WMHRA differs as items related to the person are maintained in context with the workplace at all times. Focusing on the person in context introduces the second very important distinction from other tools.

Using a post-positivist perspective, this tool is designed to detect concrete, psychosocial risk factors that are observable in the workplace. This design enhances the responsibility and accountability for mental health in the workplace as there is the possibility to have many potential end users of the WMHRA such as the employee, a supervisor or occupational health personnel. Many currently available tools are self-report measures filled out by the employee or assessments that are completed by an expert observer. This new perspective of encouraging the involvement of many stakeholders in the process of psychosocial risk measurement may provide organizations with a more effective method of primary prevention in the workplace.

The development of the WMHRA is an initiative consistent with the concept of the occupational–focused preventive approach to illness and disability urged by Wilcock, (2006). Focusing on the detection of psychosocial risk factors in the workplace may allow employees to thrive. As suggested by Wilcock (2006), it is through "doing being and becoming advisedly and wisely" that we may overcome illness and disability (Wilcock, 2006, p.282).

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APPENDICES

Appendix A

Standardized Email for (insert organization name here) to use when distributing the invitation to participate and the Letter of Information to employees

Internal Organization email Letter head

Date:

Re: A study regarding the validity of a Workplace Mental Health Risk Assessment

As part of our ongoing commitment to wellness, we have agreed to take part in a study in conjunction with the University of Western Ontario regarding Mental Health issues in the workplace. A team of investigators are conducting a study on a workplace mental health risk assessment tool currently in development. The purpose of this tool is to detect early warning signs within a workplace that may risk the mental health of its employees. This study is using a focus group format to seek feedback from employees in regards to the content of this tool.

We are seeking (insert expert group name here) who would like to participate in the focus group. Your participation in this study is entirely voluntary and your decision to participate is confidential.

The letter of information outlining this study is attached. Please read this and then if you wish please indicate your willingness to participate or to request further information on this study by clicking on the link to the principal investigator of this study. If you wish to find out more information please see the attached letter of information.

Signed by the representative of (insert organization name here)

Appendix B

Letter of Information and Consent

Workplace Mental Health Risk Assessment: Exploring its validity and applicability

You are being invited to participate in a research study that examines the use of the Workplace Mental Health Risk Assessment (WMHRA). This is an assessment tool that has recently been designed to assist companies with the early detection of factors within the workplace that could increase vulnerability for employees to experience a mental illness. The goal is for companies to focus on prevention rather than reaction to mental illness in the workplace.

We are asking you to participate in this study as we feel you may provide the investigators with valuable feedback about this tool in terms of its use in the workplace. If you take part in this study you will be involved in a focus group with up to nine other employees who work in a similar area as yourself. The focus groups will be approximately two hours long and will take place in a convenient location for your work. Focus groups may be conducted face-to-face, by telephone or by video conferencing depending on the locations of respondents. In the focus groups, your perspective on the content and applicability of the WMHRA will be explored.

Information in the focus groups will be audiotaped for purposes of analyzing and compiling the data. A summary of the findings from this study will be mailed to all participants and you may be contacted by the investigators to verify if the summary is consistent with your experience. Data from this study will be used to modify the WMHRA in order to create a more valid, rigorous and user friendly assessment tool.

There are no known risks to your participation in this study.

There are no known benefits to you associated with your participation in this research.

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time.

Your research records will be stored in a secure manner. The audiotapes will be heard only by the members of the research team. The audiotapes will be locked in a cabinet in a secure office and they will be destroyed after 5 years.

If the results of the study are published, your name will not be used.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact the Director of Research Ethics at 519-661-3036, or email ethics@uwo.ca. Representatives of The University of Western Ontario Health Sciences Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

You do not waive any legal rights by signing the attached consent form.

This letter is for you to keep. You will be given a copy of this letter of information and consent form once it has been signed.

Principal investigator:

Lynn Shaw PhD. OT. Reg. (Ont.)

Assistant Professor

Faculty of Health Sciences

School of Occupational Therapy
University of Western Ontario
Elborn College, 1201 Western Rd.

London, Ontario

N6G 1H1

Telephone:

Fax:

Email:

Co-investigators Jocelyn Cowls, O.T. Reg.(ON). Homewood Health Centre, Guelph ON.

I have read the Letter of Information, all my questions have been answered, and I agree to participate in this study.

_____ _____

Signature of Participant Date

_____

Printed Name of Participant

_____ _____

Signature of Person Obtaining Consent Date

_____

Printed Name of Person Obtaining Consent

Appendix C

Participants needed!!

Did you work for at least 2 years prior to returning to school?

If so, we are looking for *your* perspective regarding the prevention of mental illness in the workplace.

Volunteers will participate in a focus group in order to provide feedback on the content and utility of a newly developed ***"Workplace Mental Health Risk Assessment".*** Your input will influence the design of this tool and may ultimately have an impact on the creation of a tool aimed to reduce mental illness in the workplace.

If you are a graduate student with prior full time work experience and you are interested in participating, please contact Jocelyn Cowls or Dr. Lynn Shaw

Participants needed!!

Appendix D

Focus Group Questionnaire
for the Study on Establishing Content Validity of the
Workplace Mental Health Risk Assessment

1. What are the issues that one needs to consider in introducing the idea of assessing mental health risks in the workplace?

2. What are the potential challenges that [insert appropriate group based on the composition of the focus group participants] may encounter with identifying mental health risks in the workplace and introducing a tool that could be used to evaluate and identify these risks? Prompt: what are the barriers?

3. What are the strategies that might support the evaluating of mental health risks in the workplace?

4. How can confidentiality of the users be maintained when workers or supervisors or employers participate in evaluating mental health in the workplace?

5. How might workers use the information gathered?

6. How, if at all could an evaluation of mental health risks in your workplace be introduced and implemented?

7. How might a mental health evaluation of risks be used to improve mental health in the workplace?

8. What if any are the benefits of evaluating mental health risks in the workplace?

9. What if any risk factors come to mind when you think of a mental health risk assessment that have not yet been identified?

Appendix E

Item Re-wording

Item #	Original wording	Re-wording
1	How would you describe your memory?	Does this employee exhibit difficulties with memory that impact work performance?
2	How would you describe your concentration?	Does this employee exhibit difficulties with concentration that impact work performance?
3	How would you describe your ability to make decisions?	Does this employee have difficulty making decisions at work?
4	How would you describe your current physical health?	Does this employee have any health problems that impact work performance?
6	How would you rate your confidence in your job skills?	Does this employee appear anxious about their ability to do the job well?
7	How would you describe your work performance in the past six months?	Has there been a deterioration of work performance over the past six months?
8	How has your attendance to work been in the past six months?	Has there been an increase of absenteeism over the past six months?
9	Do you take regular breaks?	Does this employee work without taking regular breaks?
10	Do you work your required (or agreed upon) hours?	Does this employee work more hours each week than the job description requires?
14	Do you react aggressively in situations of conflict?	Have there been acts of aggression towards others within the workplace over the past six months?
19	Has the nature of this job changed over the past year?	Have recent changes in this job raised concerns of job security?
20	Is the nature of this job expected to change in the coming year?	Do upcoming changes in the job create concerns of job security?
25	Rate the resources & extended benefits available through your workplace for stress related issues	Is there a lack of recognition (e.g. good pay, verbal recognition, rewards, and/or promotion) in this organization?
26	Is there a formal and timely process for performance appraisal?	Does this organization lack provision of formal feedback and acknowledgement regarding one's work performance?
27	What is your exposure to distracting stimuli?	Do distractions (i.e. visual or auditory) in this workplace interfere with work performance?
28	Do you have access to some space for yourself?	Are the physical surroundings in this workplace restricting (e.g. cramped or lacking or privacy)?
30	How would you describe the physical environment that you work in?	Is the physical environment in the workplace unhealthy (i.e. noisy, dirty, cluttered, cramped, exposure to hazardous materials)?
31	Do you regularly work the over-night shift?	Does this job require working the overnight shift?
33	Do you face deadline pressures?	Does this job impose intense demands in the form of deadlines?
36	Are there unpredictable/unexpected changes (e.g. schedule, tasks, and or knowledge)?	Is there a lack of control over one's job schedule, duties or responsibilities in this occupation?
44	What percentage of your job requires taking care of others physically or emotionally?	Does this job require caring for the physical or emotional needs of others?
47	How much connection do you have to your work via technology (e.g. pagers, blackberries, etc.)?	Do the work demands of this job extend past regular work hours due to technology (e.g. pagers, blackberries, etc.)?
51	Are you exposed to alcohol, drugs or gambling in the workplace?	Do workplace peers engage in addictive behaviours such as using alcohol, drugs or gambling during work hours?

Appendix F

Outcome for all original items

#	Original item in the WMHRA	Outcome of item
	Person Domain	
1	How would you describe your memory?	Re-worded
2	How would you describe your concentration?	Re-worded
3	How would you describe your ability to make decisions?	Re-worded
4	How would you describe your current physical health?	Re-worded
5	How would you rate your sleep?	Maintained
6	How would you rate your confidence in your job skills	Eliminated (redundant)
7	How would you describe your work performance in the last 6 months?	Re-worded
8	How has your attendance to work been in the past 6 months?	Re-worded
9	Do you take regular breaks?	Re-worded
10	Do you work your regular (or agreed upon) work hours?	Eliminated (redundant)
11	How would you describe your level of anxiety?	Maintained
12	How has your interaction with others changed over the last 6 months?	Maintained
13	Do you avoid situations of conflict?	Eliminated
14	Do you react aggressively in situations of conflict?	Re-worded
15	Have you ever witnessed a traumatic event?	Eliminated
	Environment/Workplace Culture Domain	
16	Objectively, how are interpersonal relations at your workplace?	Maintained
17	How well does your organization offer recognition for your work (e.g. pay, awards, promotions)?	Maintained
18	Do you worry about your job security?	Maintained
19	Has the nature of your job changed over the past year?	Eliminated (redundant)
20	Is the nature of your job expected to change over the coming year?	Eliminated (redundant)
21	How would you describe your supervisor?	Maintained
22	How would you describe the general support from your co-workers?	Maintained
23	Have you witnessed negative comments or behaviours towards or about people with mental illness in your workplace?	Maintained
24	How well do you believe that your company keeps personal matters confidential?	Maintained
25	Rate the resources and extended benefits available in your workplace for stress related issues?	Re-worded
26	Is there a formal and timely process for performance appraisals?	Re-worded
27	What is your exposure to distracting stimuli?	Re-worded
28	Do you have access to some space for yourself?	Re-worded
29	Have there ever been episodes of violence or bullying in this workplace?	Maintained
30	How would you describe the physical environment that you work in?	Re-worded
	Occupation Domain	
31	Do you regularly work the overnight shift?	Re-worded
32	Do you receive clear instructions and information concerning your work?	Eliminated
33	Do you face deadline pressures?	Re-worded

#	Original item in the WMHRA	Outcome of item
34	How often do you find you have nothing to do at work?	Eliminated
35	What percentage of time does this job require solitary work?	Eliminated
36	What percentage of time are tasks performed repetitively or routinely?	Eliminated (redundant)
37	Are there unpredictable/unexpected changes in schedule/work tasks?	Eliminated
38	What percentage of time does this job requires solitary work?	Eliminated
39	Rate the amount of control that you have over your job?	Maintained
40	How much exposure do you have to emotionally distressed situations or individuals?	Maintained
41	How much exposure do you have to situations of conflict?	Maintained
42	What degree of supervision do you exercise?	Eliminated
43	What degree of responsibility and accountability is required?	Eliminated
44	What percentage of your job requires taking care of others physically and/or emotionally?	Re-worded
45	Does this job have an inherent risk of violence?	Maintained
	New items	
46	How would you describe your commute?	Eliminated
47	How much connection do you have to your work via technology (e.g. pagers, blackberries, etc.)?	Re-worded
48	Is your performance at work impacted by external responsibilities (e.g. day care, domestic pressures etc.)?	Maintained
49	Have you experienced any sudden changes at work in the following areas: attendance, mood, work performance, social interaction?	Maintained
50	On average how much overtime do you work each week?	Maintained
51	Are you exposed to alcohol, drugs or gambling in the workplace?	Re-worded