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A Stakeholder Generated Conceptualization for Successful Return to Work Outcome Evaluation: A Concept Mapping Approach

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Health and Rehabilitation Sciences

A STAKEHOLDER GENERATED CONCEPTUALIZATION FOR SUCCESSFUL RETURN TO WORK OUTCOME EVALUATION: A CONCEPT MAPPING APPROACH

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Abstract

Measurement of return to work (RTW) lacks attention to outcomes of relevance to all stakeholders. The objective of this thesis was to define what constitutes a successful RTW outcome from a stakeholder perspective and determine how to best measure it. A concept mapping method was used to create a conceptualization of successful RTW outcome based on indicators of interest and importance to various stakeholders. RTW researchers were questioned and the literature was searched for measures that mapped to the conceptualization and concepts.

Stakeholders, made up of RTW consumers and providers, generated 48 indicators of successful RTW which were subsequently grouped into six concepts. Stakeholders also rated the importance of each of the indicators. In preparation for creating a final conceptualization the stakeholder-generated concepts and rating data were presented to a researcher group who were invited to comment and provide further input. The researcher group confirmed the inclusiveness of the generated concepts and discussed various aspects of the resulting conceptualization. Names of measures that appeared to evaluate various concepts were also offered.

The final conceptualization was constructed in an attempt to reflect both practice and research realities. The stakeholder-generated data, discussion points from RTW researcher focus groups and the investigator's intimate knowledge of both practical RTW issues and RTW literature were used in the creation of a logic model. Final concepts were *support and collaboration*,

stakeholder perspectives, *rights, respect and dignity*, *maintenance of well-being*, *worker job function* and *worker job satisfaction*. The logic model was developed to illustrate temporal aspects and the relationships among the concepts of this RTW outcome evaluation theory.

This project is the first that identifies shared and clear goals of RTW program outcomes. Results suggest that there are measures that fully capture some concepts but aspects of other concepts will likely need development of new measures. Further study is needed to determine the ability of the model to differentiate between successful and unsuccessful RTW outcomes and to develop an outcome measure that targets the concepts of the model explicitly.

Keywords

Return to work, outcome measures, program theory, concept mapping, logic model, stakeholder perspectives

Co-Authorship

Chapter 2 has been accepted for publication and was co-authored with Lynn Shaw. Chapters 3 and 4 are being prepared for submission with Rhysa Leyshon as first author and Lynn Shaw, Ivan Steenstra and Alan Salmoni as co-authors. The co-authors provided advice and comments relative to the interpretation of data.

Dedication

I dedicate this thesis to Morgan without whom my doctoral studies would never have been completed. Morgan is my source of serenity, a listener, never judging, never talking back and never tiring of hearing about my thesis. By my side through thick and thin (except for the many times I yelled at the computer), never failing to remind me to take a break at just the right time, and asking only for treats in return. You are indeed man's best friend.

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My parents were understanding if not willing sounding boards. My mother's gentle queries regarding my intended completion date were posed

tactfully but acted as reminders to keep moving forward. When push came to shove and the going got tough Mom picked up the slack - keeping me in clean clothes and my belly full of healthy food. There is no substitute for Mom or words to describe my gratitude.

My friends who also listened to my rants and frustrations at both the system in general and my own inability to stay focused played an important role. Without their willingness to listen I would have either dropped out or else committed an act of violence for which I would be sitting in a prison right now.

And last but not least I will be forever indebted to my good friend Erin Estabrooks whose attention to detail and administrative skills helped to put it all together. I will never be able to repay you but I thank you from the bottom of my heart.

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1. CONCEPTUALIZING SUCCESSFUL RETURN TO WORK OUTCOME

Background and Introduction

Work[1] is a vital and prominent aspect of life for most adults. Humans define themselves by the work they do: teacher, therapist, musician, mechanic, accountant, et cetera (Christiansen, 2004). Without work people lose their sense of purpose and identity (Kielhofner, 1995) and structure and organization (World Health Organization [WHO], 1988), which can directly or indirectly have significant effects on a person's physical, mental and social well-being (WHO, 2001, 2008). The importance of maintaining or restoring a person's ability to perform work is an important goal of health and rehabilitation services and ongoing research in the area of work is necessary to ensure the highest level of health is achieved for all people and societies (WHO, 2008).

A person who is unable to work because of a health-related impairment is considered work disabled. The number of work disabled persons ranges in most industrialized countries, depending on age group, from about 4% to 40% of the population, representing approximately 470 million people worldwide and despite social safety nets many live in or near poverty levels (Australian Bureau of Statistics, 2003; Bevan, Quadrello, McGee, Mahdon, Vavrovsky, & Barham, 2009; International Labour Organization [ILO], 2010; International Labour Office [ILO], n.d.; "Persons with", 2008; Statistics Canada, 2010; Wilkinson, 1996). The International Labour Organization estimates that costs related to unemployment due to work disability on average cost nations about 7% of their GDP. This fact,

[1] Work refers to competitive employment performed either in or outside of the home in which the person receives financial rewards (money) for the performance of tasks.

combined with an aging population of workers who are more likely to be found work disabled, has led to estimates that the rates of work disability are unsustainable and will result in an inability to maintain socioeconomic status globally (ILO, 2010). To ensure not only individual health but also socioeconomic health it is important then to ensure that those capable of working are supported to do so (Borsch-Supan, 2007).

Many of those who have a work disability were engaged in remunerative work at some point and became work disabled following an injury or illness (Association of Worker's Compensation Boards of Canada [AWCBC], 2008). Some individuals with serious impairments are legitimately prevented from competitive, permanent and full-time employment, yet there are others whose relatively minor impairments result in long-term work disability. It is felt that these work disabilities are preventable and result more from problems in health care and social systems than from the extent or severity of workers' impairments (Borsch-Supan, 2007; Daniell, Fulton-Kehoe & Franklin, 2009; ILO, n.d.; Kosny et al., 2006; Lysgaard, Fonager, & Nielsen, 2005; Ozegovic, Carroll, & Cassidy, 2010; Pransky, Katz, Benjamin, & Himmelstein, 2002; Sinokki et al., 2010). For example Lysgaard et al. compared workers admitted to a vocational rehabilitation program and found that when factors such as education level, duration of time off work, nature of the condition and the type of compensation received were controlled for, workers receiving financial compensation were less likely to return to work than workers not receiving financial compensation. An example of the health care system's contribution to work disability relates to the care provided to

injured workers. The majority of primary care providers are able to self- identify their essential role in returning injured workers to work but many lack the skills and knowledge required to successfully return workers to work (Kosny et al., 2006; Pransky et al.; Russell, Brown, & Stewart, 2005). What the above examples suggest is that improved knowledge regarding work disability and return to work (RTW) on behalf of compensation agencies, workers and health care providers could increase RTW rates.

The concept of RTW has likely existed for as long as humans have held jobs and sustained injuries or illnesses that interfere with the ability to work but the term appears to have taken on expanded meaning and increased focus in recent years (Young, Roessler, et al, 2005). Due to an aging workforce with increasing work disability rates and the escalating costs associated with work disability insurance programs, the increased attention and emphasis directed towards RTW appears to have resulted in both a shift in work disability-related policy, from mainly a financial compensation system to one of health maintenance, disability prevention and rehabilitation; and an increased awareness of the rights (and abilities) of persons with disabilities (AWCBC, 2008; Borsch-Supan, 2007; "Canada and", n.d.; Guo & Burton, 2010; ILO, 2010). Work disability-related literature from the first half of the 20th century tended to use the term to mean *back at work* (Gibbons, 1921) while currently the term RTW is used to refer to both the *process* of returning an injured worker[2] to work and the *outcome* of that process (Franche, Baril, Shaw, Nicholas, & Loisel, 2005; Krause,

[2] To increase the flow and ease of reading this thesis, the term *injured worker* will refer to any worker who lost time from work due to any physical, mental or social health-related impairment (illness, disease, disorder, syndrome, condition or injury) regardless of causation.

Frank, Dasinger, Sullivan, & Sinclair, 2001; Shaw, Segal, Polatajko, & Harburn, 2002). Essentially RTW has evolved, perhaps unintentionally and unconsciously, from a state of being (*back at work*) to a program (*process and outcome*) (Parsons, Eakin, Bell, Franche, & Davis, 2008).

During the evolution of RTW into a program, there was a failure to clearly identify critical constructs of the program design and implementation (Lipsey, Crosse, Dunkle, Pollard, & Stobart, 1985; Schultz, Stowell, Feuerstein, & Gatchel, 2007; Young, Roessler, et al., 2005), which has resulted in an inability to measure the outcomes of RTW programs due to the absence of valid and reliable measurement of those constructs (Chen & Rossi, 1987; Young, Roessler, et al.). The following pages outline why a theoretical foundation and development of critical constructs of RTW are necessary and set the groundwork for the studies carried out in this thesis.

Literature Review

The Context of RTW

Impact of work on health. Lack of work has been studied as a potential source of physical, mental and social health disorders (Ferrie, Shipley, Marmot, Stansfeld, & Smith, 1995; Lavis, Farrant, & Stoddart, 2001). Extended unemployment regardless of reason leads to increases in chronic disorders and mental and financial distress, which also tend to spread to family members (Artazcoz, Benach, Borrell, & Cortès, 2004; Sleskova et al., 2006; Wilkinson, 1996; WHO, 1988). The benefits that come from employment include social status, self-esteem, physical and mental activity and the use of one's skills

(Artazcoz et al.). The unemployed have higher rates of self-reported ill health (Amstadter et al., 2010; Zunzunegui, Forster, Gauvin, Raynault & Willms, 2006), increased divorce rates (Cherlin, 1979; Hansen, 2005; Jensen & Smith, 1990) and higher mortality rates (Davila et al., 2010; Martikainen & Valkonen; 1996). Non-workers have higher rates of tobacco, alcohol and drug use and increased incidence of depression and anxiety (WHO, 1988). Persons with disabilities receiving a disability pension have higher mortality rates than persons with disabilities who are working even when age, sex and underlying disability have been controlled for (Wallman, 2010). Wallman's findings suggest that engagement in paid work has a positive effect on life expectancy and general health status. Essentially work exerts a positive influence on a person's health (Waddell, Burton, & Aylward, 2007).

A body of literature also exists that demonstrates aspects of work can lead to ill health, so understanding the balance between working and not working on positive health outcomes can be confusing. Much of the research linking work and ill health has focused on specific work-related risk factors associated with health conditions (Karasek & Theorell, 1990; Slot & Dumas, 2010; St.-Arnaud, Bourbonnais, Saint-Jean, & Rhéaume, 2007; Stocks, McNamee, Carder, & Agius, 2010). Numerous risk factors for musculoskeletal disorders (MSDs[3]) are linked to many jobs (Helander, 2006; Weiss & Chan, 2008). Certain cancers are associated with a variety of industries (Gold et al., 2010; Vida, Pintos, Parent, Lavoué, & Siemiatycki; 2010). Stress and responsibilities at work are linked to

[3] MSDs include cumulative trauma, repetitive strain, overuse, sprain, strain and peripheral nerve type injuries.

mental health disorders (Karasek & Theorell). One important difference in the negative health outcomes found between working and not-working relates to the work environment. Work-related ill health tends to result from a specific risk factor or factors in the workplace, which once identified can typically be eliminated or minimized (Laestadius et al., 2009; Schur, Kruse, Blasi, & Blanck, 2009). It is generally not the act of working that is associated with poor health but rather a specific factor at that workplace. In the non-working population, it is much more difficult to isolate and identify a specific, potentially modifiable factor that accounts for the ill health.

The WHO (1988) hypothesized that non-working people experience poorer health than those who work because of lifestyle behaviours and choices and the fact that those not working are not exposed to the same level of health promotion information and programs. The workplace constitutes an important part of a worker's environment so health is largely affected by work conditions (WHO, 1975). The purpose of occupational health is to protect and improve the physical, environmental and social well-being of workers (WHO, 1975). The lines distinguishing if an illness is or is not due to work factors are often blurred therefore there is a need to focus on both the work-related and general health of workers (Burton, n.d.). Occupational health and safety initiatives typically focus on making workplaces healthier by targeting specific risk factors and eliminating or minimizing the risk but have not historically focused on the general health behaviours and lifestyles of workers (Hong, 2010; United States Department of Labor, n.d.). The WHO (1988) has been critical of occupational health

approaches that fail to focus on the general health of workers, referring to the approach as making “work fit the man” but failing to make “man fit for work”. This distinction becomes important when looking at RTW programs, where both the worker and the workplace need to fit one another and the worker’s well-being outside of the work context has largely been ignored.

The benefits of working generally appear to outweigh both the financial and human costs of work disability, but there is currently no standard and valid manner to evaluate RTW outcomes that truly reflects the health of workers, workplaces, and communities. Methods need to be developed and tested to ensure that RTW programs result in superior health and financial well-being for workers, employers and other stakeholders in comparison to work disability.

Health and disability. The generally accepted definition of a healthy person is not simply someone who is free of disease but rather someone who experiences a state of complete physical, mental and social well-being (WHO, 1946), which is important when considering RTW, as many workers are capable of work, despite the presence of a health condition. One of the most widely recognized models of health is the WHO’s (2001) *International Classification of Functioning, Disability and Health* (ICF), which can be used to explain the relationship among health, disability and work. The ICF is well suited for RTW purposes given the wide ranging types of health conditions that affect work and work disability. The ICF collaborators created a biopsychosocial model of health by integrating medical and social models of disability in order to provide biological, individual and social perspectives of health (WHO, 2001). In the ICF a

health condition describes a diagnosis; disease, disorder, injury, state (pregnant, ageing), et cetera. Impairment on the other hand exists at a more physiological level and is a loss or abnormality of a body structure or a body function. However, disability is not inevitable in the presence of impairment. An example particularly apt to work where impairment is present without disability exists when radiological findings of abnormalities such as degenerative disc disease in the low back are identified in people who have no reported symptoms or limitations in function (Breslau & Seidenwurm, 2000; van Tulder, Assendelft, Koes, & Bouter, 1997).

Consideration of the contextual factors, such as where and how an individual needs and wants to function, play far more important roles in identifying disability and ill health than medical information alone does (WHO, 2001). The ICF model reflects the contextual factors related to work disability clearly, as well as taking into consideration worker health both at and away from work. Sandqvist and Henriksson (2004) proposed a conceptual framework of work functioning based on the ICF, which is specific to worker functioning in work roles but does not consider the worker's health outside of work activities. Both frameworks essentially encourage focus on contextual factors and effect that the interaction among person, environment and activity (work, occupations, and activities) have on performance. The ICF framework appears to allow consideration of the worker's health relative to all life roles and meaningful activity both at and away from work better, as recommended by the WHO than the work functioning framework. Being healthy, or non-disabled, is the ability to function and

participate in meaningful activities in a specific contextual environment. In the case of workers with chronic heart disease, the type of work and personal factors may prevent one worker from working and have no functional impact on another. For example, one worker is 35 years old and works as a high school English teacher. Provided the worker takes medications the worker is able to perform all work tasks and activities, so no disability exists even though the health condition is still present. If that same heart condition existed in a 65-year-old cement worker performance of job tasks, even with medications, might not be possible; highlighting the importance of context and environment in determining a person's health status and disability. Embracing a biopsychosocial model such as the ICF provides an appropriate framework for measuring and studying RTW programs (Frank, Booker, et al., 1996; Loisel, Durand, Diallo et al., 2003; Waddell, 1996; Young, 2009).

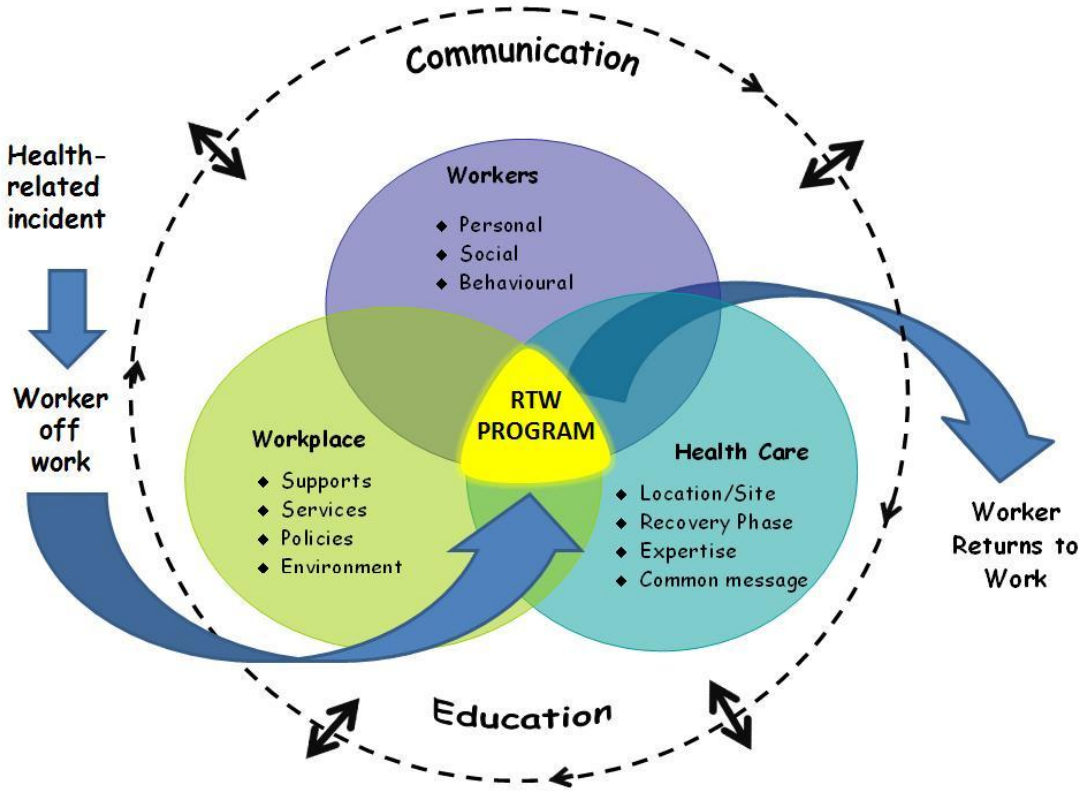
RTW complexity. Complexity as a barrier to RTW has been identified by a number of researchers, and the complexity can be attributed to the fact that numerous stakeholders are involved (Ammendolia et al., 2009; Friesen, Yassi, & Cooper, 2001; Iles, Davidson, & Taylor, 2008; Loisel, Durand, Diallo et al., 2003). The RTW process involves many different stakeholders with different roles and objectives yet RTW studies typically lack the perspectives of these various stakeholders, especially workers' (Baril, Clarke, Friesen, Stock, & Cole, 2003; Brunarski, Shaw, & Doupe, 2008; Krause, Frank, et al., 2001). Studies from the fields of health and sociology have stressed the importance of including multiple stakeholders, particularly clients (injured workers, consumers, patients) when

evaluating health-related programs or interventions (Baril et al.; Beardwood, Kirsch, & Clark, 2005; Krause, Frank, et al.; Trochim & Kane, 2005), yet these perspectives have yet to be included in RTW outcomes research.

Baril et al. (2003) undertook a qualitative study exploring the perceptions of stakeholders from three Canadian provinces in the RTW process. Participants were questioned about their views on barriers and facilitators of RTW. The results indicated that different barriers and facilitators were identified based on whether the views were of workers and worker representatives, or, management and health care professionals. Trust, respect, communication and labour relations were identified as being key components in the RTW process. It makes sense that if trust, respect and communication are important for the RTW process then these components would likely also be important in determining how the outcomes of the RTW process should be determined. By including all of the stakeholders in identifying what a successful RTW outcome is, the trust, respect and communication components are maintained.

Figure 1.1 helps to demonstrate the complexity of RTW. Since work disability may be the result of physical, psychosocial, occupational or administrative factors or a combination of these factors it is important to understand both the barriers to and facilitators of RTW in order to intervene effectively. All too often unwarranted attention is devoted to finding a medical cause and the model is intended to help identify other potential barriers to work resumption, which are equally likely to be resulting in work disability.

Figure 1.1 The complexity of return to work



The model is specifically generic of type of injury or illness in an attempt to limit attention to the medical aspects of work disability. A Venn diagram is used to illustrates the non-hierarchical roles of the main concepts that determine work disability prevention; worker, workplace and health care. The dashed line and arrows of the outer circle indicates permeability of the model allowing for new ideas and information to pass freely into and among the program concepts.

The diagram in Figure 1.1 is based on a combination of the domains included in the ICF model of disability and functioning (WHO, 2001), transdisciplinarity (Nicolescu, 2009), and evidence from occupational health and safety literature (Franche & Krause, 2002; Frank, Sinclair, et al., 1998; Loisel , Durand, Berthelette, et al., 2001; Waddell, 2004). Factors in each of the concepts

can act as facilitators to or barriers of work disability prevention. None of the concepts acts in isolation, meaning that work disability cannot be determined by any one concept; for a worker who has significant limitations in physical function, work disability can only be considered in the context of the work environment and what treatment is available (Franche & Krause; Nicolescu; WHO, 2001). The entire system is encircled with ongoing, continuous, communication and education factors that must occur among all stakeholders associated with each concept (Franche & Krause). Stakeholders from each concept learn from one another as equals (Nicolescu).

The key determinants of work disability and prevention affected by the worker include personal, behavioural and social factors. The factors are based on how a worker might react or cope and deal with an injury (Franche & Krause, 2002; WHO, 2001). Personal factors can include such things as age, gender, general health and prior injury experience (Franche & Krause; WHO, 2001). Behavioural factors include coping style, beliefs and habits (Franche & Krause). Social factors include relationships, family, friends or other supports outside of work (WHO, 2001).

Workplace factors playing a key role in preventing work disability include systems, services and policies that can act as facilitators or barriers to work (WHO, 2001). These factors might include the type of compensation or benefits offered to injured workers, the physical and organizational work environment, support for and provision of workplace-based return to work programs and attitudes of management and supervisors towards injured workers (Franche &

Krause, 2002; Frank, Sinclair, et al., 1998; Loisel, Durand, Berthelette, et al., 2001; Waddell, 2004; WHO, 2001). This concept also includes any governmental regulations or legislation that affects work disability, or any policies of the compensation or insurance industry that affect the worker and workplace.

The final concept is the health care provided to the injured worker. The intervention should be multi-disciplinary where appropriate, guideline based, appropriate for the stage of recovery of that worker, should take place at least partially at the worksite and all care providers should be sending a common message to the injured worker that encourages return to work. The longer the worker has been off work the more expertise the health care providers should possess and the greater the need for case management (Frank, Sinclair, et al., 1998).

RTW in health care. Primary health care is both an approach to health and the continuum of services beyond the traditional health care system including any services related to social determinants of health, such as income, employment, housing, education, and environment (Health Canada, 2006; WHO, 2008). Rehabilitation of a worker back to work would fall under the auspices of primary health care (Health Canada). Basic qualities of primary health care include; equity, solidarity and participation (Romanow, 2002; WHO, 2008). Equity relates to a fair distribution of the available care or program to all intended recipients (WHO, 2008). Solidarity refers to a society's sense of collective responsibility. A health policy that promotes solidarity is better able to counterbalance the unequal impact of health determinants. When there is no

solidarity the privileged, the wealthy and more educated get favoured (WHO, 2008). With respect to the value of participation, when all stakeholders actively participate the quality of public health decision-making improves (WHO, 2008).

Equity, solidarity and participation emphasize the critical inclusion of the social aspects of health in work disability prevention treatment and outcome studies. In the field of RTW the idea of including fairness, mutual agreement of ideas and the involvement of people directly or indirectly affected by the program has only recently been a focus (Ammendolia et al., 2009; Baril et al., 2003; van Oostrom, van Mechelen, Terluin, de Vet, & Anema, 2009). With respect to successful RTW program outcomes, fairness, solidarity and participation are largely missing (Loisel, Durand, Baril, Gervais, & Falardeau, 2005; Young, Roessler, et al., 2005; Young, Wasiak, et al., 2005).

The health sector is responsible for playing a leading role in developing health policy and programs, including those related to occupational health and access to health services for all workers (Romanow, 2002; WHO Commission on Social Determinants of Health [CSDH], 2008). The workers' health is the responsibility of the primary health care system (WHO, 2008). Primary health care providers, most often physicians, frequently view injured workers from a medical model and often treat the impairment outside of the work context where the goal tends to be resolution of the diagnosis, not necessarily participation in work tasks (Daniell et al., 2009; Frank, Booker, et al., 1996; Löfgren, Hagberg, & Alexanderson, 2010; Loisel, Durand, Diallo, et al., 2003; Ståhl, Svensson, Petersson & Ekberg, 2009; Tjulin, Edvardsson Stiwne, & Ekberg, 2009; Waddell,

1996; Young, 2009). According to Romanow, overcoming barriers to equity, solidarity and participation requires primary health care providers to first acknowledge the need to change from a medical model and then engage in ongoing research and improvements that include social aspects.

In Ontario guidelines for RTW have been created for some primary care professionals in partnership with professional organizations, the Institute for Work and Health and WSIB (e.g. Injury/Illness and Return to Work/Function, 2000; Working Together, 2008) but it is unclear how widely used or implemented these guidelines are. Also noted to be missing from the guidelines are indicators or measures of outcomes of RTW as the guidelines focus on implementing a RTW for a client but little to no mention is made for how the process is evaluated or when the process ends or is considered complete.

RTW and the workplace. In recent decades health promotion, with a greater emphasis on worker health rather than workplace health, has been linked to the workplace (Burton, n.d.). In the WHO's (1988) *Health promotion for working populations* report, the committee recommended active participation of workers in health promotion programs to ensure ongoing commitment, progress and impact of health care delivery on the workers' lifestyles and behaviours. In 2009 the WHO launched a program called *Healthy Workplaces*, which placed greater emphasis on improving the general health and well-being of the workforce using a biopsychosocial framework (Neira, 2010).

The message from the WHO is that occupational health initiatives should focus on engaging workers in their own health by encouraging and facilitating

collaboration among managers and workers to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of the workplace (Neira, 2010). A healthy workplace implies that the health and well-being of all workers (employees) as well as the economic viability of the workplace (employer) are necessary components and that all parties be active participants. People have differing values, ethical frameworks and motivations and as such when implementing any intervention in the workplace inquiring about the various stakeholders' needs, values and priority issues has been recommended (Baril et al., 2003; Neira; Ståhl et al., 2009; Young, Roessler, et al., 2005). Workplace-based effectiveness research indicates that success is dependent upon actively involving the affected stakeholders by soliciting their ideas and opinions in all phases of the program from planning to evaluation (Neira).

There is evidence that both client-centred and participatory approaches to treatment/intervention are successful in enabling occupation or preventing long-term disability. For the most part this success has been attributed to the fact that the worker or client feels valued. Studies investigating the value of a participatory ergonomics approach for workers with low back pain showed that even though many of the ergonomic suggestions were not even initiated, the workers were still able to return to work and sustain that work for at least six months (Loisel, Gosselin, et al., 2001; Anema, Steenstra, Urlings, Bongers, de Vroome, & van Mechelen, 2003). In other words it was not the actual ergonomic intervention that made the difference, it was that the worker was included and involved in the

process. Using client-centred or participatory approaches to RTW allows the worker to have a sense of power and to be treated fairly and justly. It can be argued then that a similar approach to developing an outcome measure makes sense (Patton, 1997). If the workers and employers feel that they are involved, are treated fairly, and that the things that matter to them are valued in a way that is transparent, there is a greater chance of the workers and employers being more interested in the process and wanting to make it successful.

Measuring RTW Outcomes

Research into RTW has increased significantly in the past decade, but high quality research is still relatively scarce (Baril et al., 2003; Frank, Booker, et al., 1996; Krause, Dasinger, Deegan, Brand, & Rudolph, 1999; Krause, Frank, et al., 2001). Even more problematic is that the research that is available is difficult to interpret and compare because RTW outcomes are not standardized or universally defined (Frank, Booker, et al.; Krause, Frank, et al.; Wasiak et al., 2007; Young, Pransky, & van Mechelen, 2002). The problems associated with measuring RTW relate to a lack of clearly identified goals. Questions arise as to what outcomes are desired; is it a return to work if the worker returns to a different job or a different employer? What about number of hours worked, or number of sick days taken? What happens if the worker goes back on disability shortly after returning to work? It is this lack of consistency that has made RTW programs difficult to evaluate and compare.

Numerous factors have been found to influence RTW outcomes and impact successful RTW. Research indicates that the longer a worker is absent

from work the less likely they will be to return (Krause, Dasinger, & Neuhauser, 1998). The literature also indicates problems with recurrent injury, absenteeism, and presenteeism, indicating that although a worker may get back to normal duties, there is much debate over how permanent and productive this return is (Abenhaim, Suissa, & Rossignol, 1988; Rossignol, Suissa, & Abenhaim, 1988; Steenstra et al., 2006). Little evidence is available on the actual absentee and presentee rates of injured workers once they have been deemed back to normal duties as the tendency is to stop monitoring workers once they are back working (Burton, Bartys, Wright, & Main, 2005). Estimates indicate that up to 85% of workers with low back disorders will have a work disability recurrence in their lifetime (Andersson, 1999). Results from a Canadian study found recurrence rates of 20% in one year and 36% over three years, higher risk of recurrence for men than women, and the highest recurrence rates in workers age 25-44 years (Baldwin, Johnson, & Butler, 1996; Rossignol et al.). Baldwin et al. argue that using the first RTW as a successful outcome was misleading since about 85% return to work within one year of the injury but 61% of workers go on to have subsequent episodes of disability. A study at Cornell found that presenteeism rates for back pain were one of the top five physical reasons for decreased productivity at work (Goetzel et al., 2004). Presenteeism is a term that has been used to describe the lost productivity from workers who attend work but due to illness and injury are not able to be productive and would have cost the employer less if they had taken a sick day. Many companies report that presenteeism likely costs more than absenteeism (Aronsson, Gustafsson, & Dallner, 2000).

Additionally, workers who return to different or modified work, often give up the job if they have not been involved in the decision-making and do not feel that it is suitable (Beardwood, Kirsh, & Clark, 2005). It is estimated that in Ontario approximately 85% of all injured workers return to work initially, but over time this number falls to about 50% (Butler, Johnson, & Baldwin, 1995). All of the above factors show that just getting the injured worker back to work is not enough, and that other parameters are needed in measuring the RTW outcome. Returning to pre-injury work with the pre-injury employer is not a satisfactory outcome measure and the various stakeholders may each define a successful RTW differently. No clear picture has evolved for why a person does or does not RTW after an illness or injury, except perhaps the individual worker's belief about his or her capabilities (Shaw et al., 2002). What appears to be missing from the RTW outcome measures is the worker's perspective including consideration to the quality of life of the injured worker outside of work and how the RTW may affect the worker's ability to participate in other activities. Surprisingly there also appears to be little evidence that the employers view or interests are taken into consideration.

The Program Evaluation Approach

Program evaluation can be applied to any activity in which the effectiveness of an organized social action is questioned (Rossi, Lipsey, & Freeman, 2004). The most common activity in program evaluation is assessing the outcomes of programs (Patton, 1997). The question to be considered here is, how effective are RTW programs? It is not possible to answer that question before first knowing what constitutes a successful RTW and what the outcomes of interest or importance to the RTW stakeholders are. The following dissertation has contemplated RTW in a social program context using an interpretive approach with a rehabilitation science perspective. Social programs are aimed at having a positive or beneficial impact on a human problem or condition (Rossi et al.) so for RTW programs the aim is to eliminate work disability. The interpretive approach entails that the evaluator develops an understanding of the perspective, experiences and expectations of all stakeholders (Potter, 2006). An interpretive approach leads to a better understanding of the various meanings and needs held by stakeholders (Potter). The rehabilitation science perspective can be defined as the study of basic and applied aspects of health services, social sciences and engineering in relation to restoration of worker functioning through interaction with the workplace environment (Brandt & Pope, 1997).

Summary

There is a growing trend in health and disability outcomes research that involves stakeholders, particularly clients, in determining the outcomes of interest and importance (Andresen, Lollar & Meyers, 2000; Backman, 2005; Bartlett &

Lucy, 2004; Kane & Trochim, 2007). Essentially, the administrative outcomes found in the literature are of value mostly to those who are funding and paying for the service (compensation boards, insurance companies), and fail to consider the perspectives of the workers, employers and even health care professionals. One would expect that injured workers would be more concerned about their health and resumption of all types of activities, just as employers would likely be more concerned about the worker's productivity and quality of work performance.

A standard and valid measure of RTW outcomes would make it possible to evaluate or measure the impact that work injury has in our society and on specific individuals including the worker, the family, the employer, et cetera. Having a standard RTW outcome measure would enable researchers to evaluate the effectiveness of interventions aimed at helping injured workers (CREIDO, 2008; Krause, Frank, et al., 2001). Franche, Baril, et al. (2005) called for an expanded range of outcomes with RTW research. These researchers pointed out the lack of issues such as quality of life, medication use, participation in other life roles and healthcare costs not covered by compensation systems. The above evidence suggests that RTW researchers are both supporting and calling for the need to develop better methods of evaluating RTW outcomes.

Current RTW outcome measurement is fatally flawed and support for research into RTW outcomes is evident (Wasiak et al., 2007; Young, Roessler, et al., 2005). The explanation for this is a lack of program theory for RTW programs, subsequently resulting in a lack of reliable and valid outcome measures (Rossi et al., 2004). Essentially, a common goal or objective is missing and each

stakeholder potentially has a different view of the purpose and objective of the RTW process (Young, Wasiak, et al., 2005). A common trend that appears in primary health, occupational health and outcomes research is inclusion of stakeholders in the planning, intervention and evaluation of programs, which is the key to ensuring the needs, wants and well-being of all parties are accounted for (Backman, 2005; Neira, 2010; Tjulin et al., 2009; Tschernetzki-Neilson, Britnell, Haws, & Graham, 2007).

Before choosing measures with which to evaluate RTW outcomes, the outcomes that are important to key stakeholders need to be identified. The goal of this dissertation is to lay a foundation for future development of RTW outcome measures that reflects the interests of RTW stakeholders. By collaborating with the stakeholders to identify what should be measured and how, the results become meaningful and trusted. By improving the way RTW outcomes are measured, more and better quality research into RTW programs can take place and the overarching hope is that RTW successes will increase with fewer people experiencing work disability. Including all stakeholders in the RTW outcome research, thus making it transparent and allowing for common goals to be identified, will facilitate and improve communication and trust. Eliminating the potential for adversarial relationships could go a long way in improving working conditions in general. Inclusion of the stakeholders in identifying outcomes for evaluation aligns well with trends in primary health care, occupational health and in outcome measurement development.

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2. USING MULTIPLE STAKEHOLDERS TO DEFINE A SUCCESSFUL RETURN TO WORK: A CONCEPT MAPPING APPROACH[4]

In investigating measurement and determinants of return to work outcomes for The National Institute for Occupational Safety and Health (NIOSH), Krause, Frank, Dasinger, Sullivan, and Sinclair (2001) concluded that there was a need for clear definitions of RTW outcomes and a comprehensive conceptual framework. A standard and valid measure of RTW outcomes would make it possible to evaluate or measure the impact that work injury has on our society and on specific individuals including the worker, the family, and the employer. A standard RTW outcome measure would also enable researchers to evaluate the effectiveness of interventions aimed at helping injured workers (CREIDO 2008, Krause, Frank, et al.)

RTW is both a process and an outcome, but according to a number of RTW researchers (Pransky, Gatchel, Linton, & Loisel, 2005; Young, Roessler, Wasiak, McPherson, van Poppel & Anema, 2005) the concept is poorly defined and lacks standardized definition. The Ontario Workplace Safety and Insurance Board (WSIB) defines RTW as a process, made up of a series of linear occurrences commencing with a reported injury/illness, but providing no indication of when the process ends (Workplace Safety and Insurance Board [WSIB], 2004). Simply being at work is no longer considered an acceptable outcome of the RTW process (Beaton, Tarasuk, Katz, Wright, & Bombardier, 2001; Franche, Cullen, et al., 2005; Krause, Frank, et al., 2001; Shaw, Segal,

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Polatajko, & Harburn, 2002). However, as yet the outcomes of interest or importance to the individuals involved in the RTW process (workers, employers and other stakeholders) have not been identified, which is a necessary first step in developing an outcome measure (Backman, 2005).

This paper will focus on identifying the basic concepts that make up the RTW outcomes of interest and importance from the key RTW stakeholders' perspectives. In doing so it is necessary to identify the current state of RTW outcome research, as well as trends in outcome measures development from the fields of health care and disability. It is also necessary to identify key stakeholders mentioned in the literature.

Review of Literature

Complexity and Confusion

One aspect of RTW that complicates the research of this topic is the fact that RTW covers a very broad range of health disorders that vary in their causes, progression, treatment and prognosis. Despite evidence that social and environmental workplace factors play a more important role in RTW outcome than medical factors (Franche, Cullen, et al., 2005; Westmoreland, Williams, Amick, Shannon, & Rasheed, 2005) much of the RTW research has been diagnostic specific, focusing particularly on work-related musculoskeletal disorders of the back and upper extremity (Burton, Bartys, Wright, & Main, 2005; Cheng & Hung, 2007; Krause, Dasinger, Deegan, Brand, & Rudolph, 1999; van Duijn, Lötters, & Burdorf, 2005). There is no evidence that suggests RTW outcome measures need be specific to the actual injury or illness (Franche,

Cullen, et al.; Shaw et al., 2002). The focus of disability or rehabilitation outcomes has moved towards the language of enabling/disabling in identifying conceptual outcomes (Melvin, 2001). This focus is in part a result of the language adopted by the World Health Organization in their most recent publication related to outcomes; The International Classification of Functioning (ICF), Disability and Health (World Health Organization [WHO], 2001). The ICF is a framework in which health status is viewed from the perspectives of body functions (pathology), body structures (impairments), activities (functioning) and participation (quality of life) (Melvin; WHO, 1995). The ICF offers a framework with which work disability can be approached. It has been shown to encompass the factors associated with injured workers (Heerkens, Engels, Kuiper, Van der Gulden, & Oostendorp, 2004) but RTW has not generally been viewed within this type of framework. Consultation and consensus of the multiple RTW stakeholders in identifying indicators of successful RTW is needed to address this gap.

Researchers have discussed the issue of sustainable work but no suggestion of how long the work need be sustained before the RTW process can be terminated was found (Baldwin, Johnson, & Butler, 1996; Krause, Dasinger, et al., 1999; Pransky et al., 2005; Young et al., 2005). Young et al. suggested that it is dependent on the goals of the worker and RTW team. The process may not end until the worker has attained job advancement, or some workers may wish only to return to the level of work achieved prior to injury, which Young et al. refer to as “maintenance” and define as retention of employment through such actions

as adapting to the organizational culture, achieving a satisfactory level of position performance, and relating effectively to co-workers. Once again the views of the actual RTW stakeholders regarding the issue of sustainability represents another gap in the knowledge of RTW outcomes.

Outcome Issues

RTW outcomes identified in the literature are typically dependent on whether or not the worker is working at a set time post-injury, or the amount that is spent on disability benefits; outcomes that Krause, Frank, et al. (2001) termed “administrative”. These administrative type outcomes are typically nominal scales (e.g. working/not working) with information of interest mostly to agencies that pay for the RTW programs (insurance company, compensation board, et cetera). (Franche, Baril, Shaw, Nicholas, & Loisel 2005; Franche, Cullen et al., 2005) called for an expanded range of outcomes with RTW research and suggested inclusions such as; measures of re-injury, recurrences, quality of life and work life, participation in other life and social roles, medication use, healthcare costs not covered by compensation systems, and work limitations. As yet there is a lack of evidence of what the RTW stakeholders feel should be measured as indicators of successful RTW outcomes.

Stakeholders

A growing body of literature in health care and rehabilitation outcomes research stresses the importance of including consumers when evaluating programs (Baril, Clarke, Friesen, Stock, & Cole, 2003; Bartlett & Lucy, 2004; Beardwood, Kirsh, & Clark, 2005; Franche, Baril, et al., 2005; Kane, 1997;

Krause, Frank, et al., 2001; Trochim & Kane, 2005). Researchers in the area of RTW have also acknowledged the need for identifying the outcomes that are relevant to RTW stakeholders (Pransky et al., 2005) yet RTW studies typically lack the various stakeholders' perspectives, especially the worker's (Baril et al.; Brunarski, Shaw, & Doupe, 2008; Krause, Frank, et al.). The complexity of the RTW process means the involvement of many different stakeholders with different roles and objectives (Baril et al.; Franche, Baril et al.; Holmgren & Ivanoff, 2007). Franche, Baril, et al. identified both the primary RTW stakeholders and the paradigm with which each approached RTW as follows: (stakeholder/paradigm); employer/productivity, labour representative/rights of all workers, healthcare provider/worker's health, injured worker/protection of financial security, physical well-being, dignity and career issues, and insurers/cost containment. These same authors investigated the issues surrounding stakeholder engagement and involvement in RTW research and recommended future research include methods for engaging stakeholders. It has been suggested that RTW stakeholders consider trust, respect and communication critical to the RTW process (Baril et al.). One way to nurture that trust and respect is to include the stakeholders in a participatory and collaborative manner in the RTW research.

The main purpose of this study was to generate a framework of successful RTW based on the views of stakeholders who have experienced the process from various perspectives. The objective was to facilitate an equitable, participatory, multi-stakeholder driven definition and conceptualization of

successful RTW. By involving multiple stakeholders and using a transparent method it was hoped that this would instill a sense of trust and add credibility to the resulting conceptual framework.

Method

This study used a specific form of integrated concept mapping developed and described by Kane and Trochim (2007). The term ‘concept mapping’ has been used to describe a number of similar methods but the term will be used in this paper only to refer to the Kane and Trochim method. Concept mapping, considered a form of mixed method research for program planning and evaluation, is a standardized approach designed to integrate input from a variety of participants who have varying levels of knowledge, experience and interest, while also allowing for customization to meet specific research needs (Kane & Trochim). This approach was used to maximize and instill a sense of trust and respect, not only among actual participants of the study, but also with the study results (Kane & Trochim). The concept mapping method is transparent, attempts to distribute power equally and fairly among all participants and reflects the ideas and opinions of the actual participants without author bias. One could think of concept mapping as a sophisticated type of mixed methods that combines focus group methods with participant involved analysis and interpretation of quantitative data. A computer program for managing projects and analyzing the data was purchased for this study from Concept Systems Incorporated (available at www.conceptsystems.com). The primary investigator also attended the Concept Systems Facilitator Training workshop (see above website for details).

Readers who are unfamiliar with concept mapping are encouraged to refer to references for more detail (Kane & Trochim; Trochim, 1993; Trochim & Kane, 2005).

The basic steps to concept mapping were followed and typically include the following six steps; 1) preparation, 2) generation of statements, 3) sorting and rating (rating data was collected but not reported in this paper), 4) representation of statements into maps, 5) interpretation and 6) utilization. The study reported here is the first phase of a multi-phase study and does not include the utilization step, which will be reported in future chapters. Ethical approval for this study was granted by the University of Western Ontario Health Sciences Research Ethics Board (Appendix A).

Procedure

Step 1: Preparation. Preparation included participant recruitment as well as working out the logistics of completing the study and developing the focus prompt that would be used in step 2. Participants were recruited from the local and surrounding area (generally within a one hour drive of the University). The letter of information and an invitation to participate were sent out via email to personal and professional contacts of the primary investigator who has worked clinically in the RTW sector for a number of years. Using a snowball technique recipients were encouraged to forward the information along to anyone they thought might be interested with instructions for those further recipients to contact the investigator directly.

Recruiting was done to match two groups; RTW consumers and providers. Consumers represented one of the following categories; previously or currently injured/ill worker who experienced a RTW process, co-worker of a worker who experienced a RTW process, family member of a worker who experienced a RTW process, representative (union rep, legal/paralegal) of workers who experienced RTW processes. RTW providers included the following professionals who have experience with RTW processes; occupational therapists, physical therapists, general practitioners and specialist physicians who treat injured workers, occupational health nurses, disability managers, insurance adjusters/case managers, human resource workers or any employer representative. In addition to specific sampling of participants it was also desirable to have fairly equal numbers of RTW consumers and providers, since the literature indicates that each stakeholder's RTW paradigms can differ (Young, Wasiak, et al., 2005).

To be included participants were required to have at least five years of experience working in Ontario and be fluent in English. Providers must have worked in the area of RTW for at least five years. To enhance open and free participation of all participants without the perception of persecution resulting from comments made or opinions shared in the study, volunteers were screened to make certain that no RTW provider had a current or prior professional relationship with any RTW consumer.

Following the suggestion of Kane and Trochim (2007) a participant group of 40 or fewer with a minimum number of 10 participants was sought. This

enables a variety of opinions while still enabling good discussion during the statement generation and interpretation sessions. Concept mapping allows for a variety of participant involvement. The participants who do the statement generation/brainstorming need not be the same participants who do sorting or interpretation. As a result the participants who participated in each step of this study will be described in the results of that step.

Step 2: Statement generation session (brainstorming). In preparation for the statement generation session the focus prompt was developed with input from other researchers at the Concept Systems training workshop. The focus prompt is a partial sentence that participants are asked to complete to generate statements. Also prior to the session participants were sent a letter of information containing background information [Appendix B] explaining the current state of RTW measurement and information about the approach that would be taken during the session. To avoid either consumers or providers from getting caught up in personal stories of hardship and RTW disasters an appreciative inquiry approach was used (Boyd & Bright, 2007; Bushe, 2000) in which participants were asked to focus on what the ideal situation would be rather than on what they had actually experienced. The focus was on positive or ideal conditions (i.e., not what we have but what we want).

A date and time was chosen for the statement generation session based on the availability of the greatest number of participants. Participants were asked to generate statements using the focus prompt, “One thing that indicates a worker has successfully returned to work is…” Provided the statement made

sense grammatically, all were accepted. There were no wrong statements but participants could ask for clarification. During the session the primary investigator acted as facilitator; repeating all information at the beginning of the session and taking responsibility for ensuring the group remained on task.

Step 3: Sorting statements. All 24 participants were mailed a package. The package [Appendix C] contained a short questionnaire regarding RTW background and experience, and sorting instructions and forms. Participants were asked to complete the questionnaire and sorting task and return the necessary forms. The sort task instructed participants to sort each statement into a pile or theme that made sense to them. Each statement was printed on an individual card and participants were instructed that they could not put each statement into its own group (i.e., have 48 groups), nor could they put all statements into one group. In other words, it was possible to have anywhere from 2 to 47 groups of sorted statements. They were also instructed to provide a name or title to each group of statements. The primary investigator was available by phone or email to answer any questions. Once the packages were returned by participants the data from each participant's questionnaire and sort task were entered into the Concept Systems software.

Step 4: Representation of statements into maps. The Concept Systems software package combines multidimensional scaling and hierarchical cluster analysis, in addition to generating point and cluster maps for sorted data (www.conceptsystems.com). The sort data is first analyzed through multidimensional scaling. Each participant who completed the sort task produced

sort data, which identified whether or not each statement was paired in the same group with each of the other statements. All of the sort data was combined into an association matrix, which represents how many sorters paired each of the same two statements into the same pile or group. The association matrix was then used to calculate the two-dimensional point map and then the cluster map. For each statement the multidimensional scaling analysis yields *x* and *y* values, which when plotted make up the point map form of the concept map. The points on the map represent each individual statement from the statement generation. The location of the point on the map is determined by the multidimensional scaling and reflects how each sorter paired that statement with all other statements. In multidimensional scaling the statistic that indicates goodness of fit is called a stress value. The acceptable range for concept mapping studies is between 0.205 and 0.365 (Kane & Trochim, 2007; WHO, 2001). The stress value represents how well the two-dimensional point map represents the way participants actually sorted the data.

The multidimensional scaling x, y values serve as input for the hierarchical cluster analysis, which results in a non-overlapping cluster map. The cluster map represents how the participants as a group sorted various statements. If many participants sorted statements in the same group, these end up on the point map in close proximity and then tend to be clustered together in the cluster analysis. The hierarchical cluster analysis can yield anywhere from 48 (each statement in its own cluster) to one (all statements in one cluster) cluster. Kane and Trochim (2007) developed a standardized process for determining how many clusters

should make up the final cluster solution. Essentially the investigator and/or a small group of core participants who are intimately knowledgeable with the research question determine at which level the clusters make the most sense. This decision is reached by considering which statements are being clustered together and obtaining a consensus as to whether this makes sense. In this study the authors determined the number of clusters to present for interpretation using the process described by Kane and Trochim.

Step 5: Interpretation. A second group session was conducted for interpretation. Efforts were made to bring as many participants as possible back for the interpretation, with relatively equal numbers of RTW consumers and providers represented. Participants discussed, named and interpreted the maps. Names were assigned to each cluster on the cluster map.

Validity of Concept Mapping Method

Essentially, issues of validity are built into the method by using theory and existing evidence to purposefully select appropriate participants (various RTW stakeholders in this study), who are responsible for their own analysis. As the purpose of the study is to generate concepts of successful RTW, which are social constructions, it is not really possible to create norms or standards against which to estimate degrees of error (Melvin, 2001). The concept mapping method adds validity to the results because it uses multidimensional scaling and cluster analysis in a manner that allows associations and meanings among sorters to surface by combining the individual perceptions of all participants.

Additionally, having a number of participants involved in the sorting task, whereby each sorter conceives his or her own categories ensures that categories are exhaustive. This is an important validity concern as the researcher does not confine participants to non-exhaustive or set a priori categories. In terms of external validity as it relates to the results of the study concept mapping uses both human judgment and statistical analysis together (qualitative and quantitative analyses), making concept mapping more data-driven than in other methods of research and results do not depend on researcher judgments. A final validity of meaning check results from the fact that the interpretation session is attended by participants who all performed the sorting task, which ensures that the final cluster map reflects the intentions and meanings of the sorters.

Reliability Issues with Concept Mapping

According to Trochim (1993) the traditional theory of reliability typically applied in social research does not fit the concept mapping model well. Therefore, Trochim undertook a reliability study of retrospective concept mapping projects to determine the reliability of the method. Based on that program of study the suggested sample size for sorting tasks is ideally 15 with findings suggesting that half of that number are adequate to obtain stress values within the acceptable range. Stress values are the statistic reported with multidimensional scaling and indicate the goodness of fit of the point map to the association matrix (combined sort data). Thus, it is meaningful to speak of the reliability of the similarity matrix or the reliability of the map in concept mapping, but not of the reliability of individual statements.

Results

Step 2: Generation of Statements (Brainstorming)

A total of 24 volunteers (12 providers and 12 consumers) met inclusion criteria to participate in the study. Nine participants (four personal and five snowballed contacts) attended a statement generation session in person and the remaining 15 participants (all snowballed contacts) participated in the statement generation via email. A total of 48 statements were generated by the 24 participants: 24 statements were generated during the group brainstorming session and another 24 unique statements were submitted by participants via email. Table 1 contains all of the statements generated to complete the focus prompt "O*ne thing that indicates a worker has successfully returned to work is…*" (Further explanation of Table 1 can be found under the sub-heading *Interpretation of Maps*.)

Step 3: Sorting Statements

Fifteen out of 24 participants returned the completed sorting forms. Of the nine who failed to return the forms seven represented RTW consumers and two were RTW providers. The results of the questionnaire are reported below. The sorting data that was returned was entered into the Concept Systems computer program and is reported under Step 4.

Questionnaire. The questionnaire [Appendix C] was made up of only four questions, similar to the screening questions for study inclusion. Questions included; which RTW group the participant represented (provider or consumer),

sub-category of stakeholder group (e.g. injured worker, co-worker, occupational therapist, etc.), number of years working in RTW (providers) or number of years

Table 2.1 Final cluster solution with name of cluster (concept), statements contained in cluster and bridging values

Statement Number	Statement	Bridging Value
Cluster 1: worker performance		
48	the number of hours being worked by the worker is comparable to pre-injury/illness	.00
1	the worker is performing his/her pre-injury/illness job or occupation	.01
11	the worker is able to work 85% or more of the pre-accident essential duties	.04
47	the worker is performing permanent and sustainable work (i.e. the job itself is a regular, permanent position and it is the job the worker will be doing on a permanent basis)	.07
3	the worker is performing his/her assigned work at a level that is equal to what any healthy employee would be expected to do	.07
26	the worker's ability to perform the tasks or job he/she performed prior to the injury	.12
10	the worker is earning a wage that is comparable to the pre-injury wage	.16
29	the ability to work entire shift without causing interference into the worker's other life roles	.17
28	the worker can complete required duties without a significant increase in his/her pain or discomfort level	.19
12	the worker is able to sustain the work for a period of time defined by type of injury and illness as supported by data on injury/illness recurrence rates (e.g. For low back pain worker should sustain work for 3 years, for depression 1 year, etc.)	.32
	Bridging Average: .11	
Cluster 2: worker well-being		
21	the worker is able to return to function in all aspects of life that the worker identifies as important to him/her (includes physical, social, and mental functioning)	.33
46	the worker has reached maximum recovery from his/her injury or illness	.38
30	the worker is able to maintain his/her recovery (mental health or physical injury)	.39
40	the maintenance of the worker's self worth	.40
43	regardless of degree of injury/illness the worker reports and demonstrates psychological, mental and physical well-being	.45
14	the worker is not sacrificing other life roles just to be able to work	.46
39	the worker will have suffered NO 'secondary wounding' (e.g. neither the RTW process nor the work being performed causes a new or recurrent injury or illness including mental health issues)	.54
	Bridging Average: .42	
Cluster 3: human rights		
35	the worker suffers no adversity or conflict from the employer	.21
42	the worker's human & charter rights are intact and respected by all return to work stakeholders	.26
34	the worker's workplace injury and modified duty assignments do not cause stigma in the workplace	.27
38	the worker's physical and medical restrictions are respected in accordance to what the worker's own health care professionals recommended	.29
36	the worker suffers no adversity or conflict from the insurance carrier	.32
37	the worker's wishes and input were respected when training was offered as a second career (employers, insurance carriers, LMR providers & adjudicators)	.33
41	the worker will be treated as an asset by the employer	.44
	Bridging Average: .30	

Cluster 4: satisfaction of stakeholders other than worker

9	all stakeholders feel that the worker is performing work that is productive	.41
6	the co-workers are satisfied with the work being performed by the worker	.54
31	no co-workers are disadvantaged by the (temporary/ permanent modified or accommodated) work duties being performed by the worker	.57
8	all funding sources/insurers and other external stakeholders are satisfied with what the worker is doing	.57
5	the employer is satisfied with the work being performed by the worker	.70
7	all health care providers are satisfied and agree with the duties and type of work the worker is doing	.71
45	a discontinuation of or significantly reduced, insurance benefits being paid to the worker	.81

Bridging Average: .62

Cluster 5: worker job satisfaction

2	the worker has returned to alternative work that is meaningful to the worker	.24
4	the worker is satisfied with his/her work performance	.27
20	the worker is able to identify rewarding job attributes and is taught to remind him/her self of why he/she enjoys coming to work each day	.28
27	colleagues are accepting and welcoming of the worker in the same way that they did prior to the injury	.36
13	job satisfaction of the worker	.37
33	the worker is able to effectively self-manage any ongoing issues (e.g. pain, anxiety) while remaining productive in the workplace	.37
24	the worker actually wants to be working	.42

Bridging Average: .33

Cluster 6: seamless RTW process through collaborative communication

15	that the worker had a personalized RTW plan developed with input/agreement from all stakeholders, especially the worker	.09
16	during the RTW process there was ongoing transparent, accurate and complete communication between the worker and all stakeholders	.13
17	evidence of ongoing positive, transparent communication between the worker and the workplace contact, which was initiated early by the employer	.13
25	during the RTW process a team approach was used to rehabilitate the worker back to all aspects of functioning	.14
23	the worker is able to identify who his/her advocate is	.22
19	the worker has access to a designated, experienced and skillful RTW person that the worker can contact as needed	.22
44	regardless of degree of injury/illness the worker has access to on-going support needed to cope with the life alteration as a result of his/her injury/illness	.47
18	the worker can demonstrate an understanding of the system and the potential to prevent future lost-time from work by identifying, anticipating, and mediating future potential barriers	.53
32	the worker's supervisor understands and is educated regarding work disability prevention as it relates specifically to the worker's barriers	.56
22	all aspects of the worker's life have been assessed and treated as needed	1.0

Bridging Average: .35

RTW consumer has experienced RTW situations, and knowledge of RTW policies (excellent, good, fair, poor). Participants who returned the forms were made up of 10 RTW providers and five RTW consumers. The breakdown of participant RTW category is as follows; disability manager/occupational health nurse (3), insurance adjuster (1), occupational therapist (3), physical therapist (3), injured worker (3), family member of injured worker (1), injured worker paralegal representative (1). However, it was revealed that two of the providers had personally experienced a recent RTW program following illnesses and one provider's spouse had gone through a RTW program following an injury. Therefore, a total of eight participants had experienced a RTW from the consumer perspective. The Concept Systems program does not allow for participants to fit into more than one category but it was determined that the experiences of these providers was also valuable as consumers and therefore the data gathered represented relatively equal perspectives of consumers and providers.

Self-rated knowledge of current RTW policies ranged from poor to excellent, with 73% of responses (11 participants) in the good and excellent range and only one participant reporting poor knowledge. One participant did not answer the question. The years of experience ranged from 4.5 (despite reporting five during screening) to 20 years.

Step 4: Representation of Ideas in Maps

Multidimensional scaling/point map. From the multidimensional scaling a point map was produced representing all participants' sorted data. In this study

the computed stress value was 0.313, indicating the point map is a good representation of how the participants sorted the statements. Numbers on the map in Figure 2.1 correspond to the brainstorming statements. (All statements can be found in Table 2.1, where the number for each statement is simply the order in which it was generated.) The closer the numbers are to each other on the map the more participants sorted the statements into the same piles and hence the more likely the statements are to share some concept. The further apart the statements are the more likely that they do not share a similar concept.

Figure 2.1 Combined point and cluster map

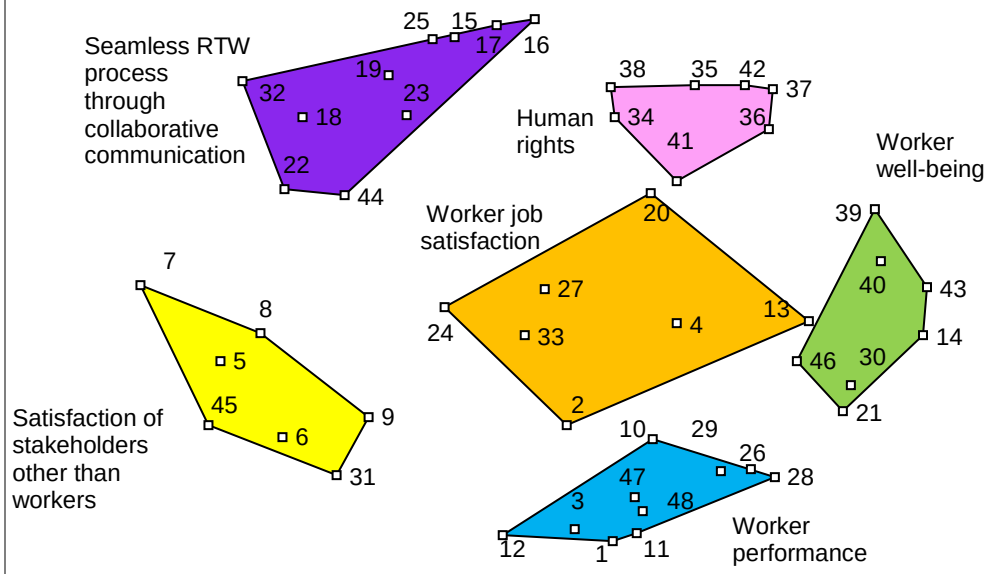

Figure 2.1 shows the cluster map overlaid on the point map. The numbers represent the statement number (refers to the order in which the statement was generated). The corresponding statements can be found in Table 2.1. The point map is a two-dimensional, relational map, meaning that no matter how the map is

turned or flipped the relationship among the points remains the same. The final cluster solution cluster map has been overlaid on this point map. By referring to Table 2.1 for the statements the reader can identify where each statement is located on the map and in which cluster the statement contributed to a concept. This map provides an overview of the concepts identified and deemed relevant to successful RTW by participants. Larger sized clusters indicate broader concepts, while clusters closer together tends to indicate more related concepts. For example, statement number 7 (on the far left of the map) *all healthcare providers agree with and are satisfied with the work the worker is doing* bears little connection to statement 43 (far right of the map) *regardless of degree of injury/illness the worker reports and demonstrates psychological, mental and physical well-being.* By comparison statements 47 and 48 (bottom centre of map) *the worker is performing permanent and sustainable work* and *the number of hours being worked by the worker are comparable to pre-injury/illness* appear to have a common thread.

In some cases many participants sorted a statement together with the same other statements. In these cases the statement would be considered an *anchor*, since it would be representative of content in that area of the map. In other instances a statement may have been sorted differently by most participants. The multidimensional scaling selects an intermediate position on the map making the statement a bridge statement. A *bridge* statement links distant areas of the map, but bears little in common with the statements immediately surrounding it. Table 2.1 contains the bridge values (far right column) for each

statement in a cluster. These values in Table 2.1 are based on the final six cluster solution that was determined by participants during the interpretation session.

Hierarchical cluster analysis. The next analysis to be applied was hierarchical cluster analysis, where individual statements from the point map are grouped into clusters. The clusters indicate similar concepts. Essentially, it is possible to have up to 48 clusters (one for each statement) down to one cluster (all statements in one). The Concept Systems software program calculates the bridging values for each statement and cluster to assist the authors in interpreting cluster maps. The final cluster solution that was presented to participants in the interpretation session was determined using the protocol described Kane & Trochim (2007). A seven cluster solution was where investigator were consistently agreeing with the groupings. The cluster map was saved, which then allows the program to compile a list of statements that fall into each cluster of the seven cluster solution.

Step 5: Interpretation of Maps

All participants were invited to the interpretation session. Efforts were made to find the most convenient time when the greatest number of participants were available. The maximum number available at any one time was 10. However, one cancelled at the last minute due to illness leaving nine participants. Of the participants, all had completed the sorting and rating tasks, and five were members of the original brainstorming session (one injured worker, one co-worker of injured worker, two occupational therapists and one insurance

adjuster). Of the nine participants, four were personally known to the investigator, but only two of the four were known to each other. The remaining participants were made up of one paralegal representative of injured workers, one occupational health nurse, and two physical therapists. Two participants from the RTW provider group also had significant others (spouses) who had experienced a RTW process, which helped to even out the numbers of providers (6) and consumers (5 including the two providers with injured spouses).

The purpose of presenting the maps to participants was to encourage self-reflection and clarify views. The objectives of this session were to reveal participants' understanding of the results and to reach consensus on the function of the findings. Kane and Trochim (2007, p. 111-113) list the core steps involved in the interpretation session however, for this study only the steps related to the sorting data were completed. The maps related to the rating data will be used in phase two - the utilization study.

Cluster maps. Following considerable discussion the group reached consensus to name clusters and to redraw the cluster map, as allowed, with the final cluster map shown in Figure 2.1, with accompanying statements and bridging values in Table 2.1. Essentially, some clusters from the original seven cluster solution were eliminated by moving statements into other clusters and one cluster was eventually split into two to reflect two concepts. The cluster names below indicate the concepts that participants viewed as adequately reflecting concepts underscoring successful RTW. Table 2.2 contains the list of statements

that fall within each cluster/concept and each statement's associated bridging value. Clusters were named by participants as follows;

1. Worker Performance
2. Worker Well-being
3. Human Rights
4. Satisfaction of Stakeholders Other than Worker
5. Worker Job Satisfaction
6. Seamless RTW Process Through Collaborative Communication

The bridging values are generally fairly small and this indicates that the clusters contain statements that are felt to be related according to the original sorting done by participants. The cluster with the highest mean bridging value (meaning that there is less cohesiveness to the concept) is cluster 4 – *satisfaction of stakeholders other than worker*. As the cluster label implies this concept covers a fairly diverse set of ideas, but also encompasses paradigms of various stakeholders, so that it may make sense that this concept is less cohesive. The *worker performance* cluster has a mean bridging value of 0.10, indicating that the statements are all closely related and cohesive.

It is important to note that the size of the cluster is not dependent on the number of statements contained within the cluster. Generally clusters that are small tend to have statements that are more closely related. Larger clusters tend to have a broader set of ideas. As can be seen by comparing Figure 2.1 and Table 2.1 that although *worker performance* contains more statements (10)

compared to *satisfaction of stakeholders other than worker* (7) the overall size of the cluster is smaller.

Clusters that are closer together generally have similar concepts. Figure 2.1 demonstrates this as the four clusters that are directly associated with the worker (*human rights, worker job satisfaction, worker well-being* and *worker performance*) are all on the right side of the map and fairly close together. The clusters that relate to other stakeholders and to the RTW process are located in the left side and are further apart from other clusters.

Discussion

Results of this study represent a conceptualization of successful RTW from a multi-stakeholder perspective, which had not previously existed in the literature. These stakeholders identified six concepts that need to be considered in furthering the understanding of successful RTW and future research toward the development of outcome measures. These concepts represent a shift away from the traditional administrative perspectives reflected in the current literature that are typically used to describe and report on RTW outcomes. The emergent concepts based on the stakeholders' interpretations of the clustered statements suggest the need for a potential shift in RTW outcomes toward a more meaningful approach that is worker-centred and process-centred. Three of the concepts *worker well-being*, *worker performance* and *worker job satisfaction* reflect biopsychocosocial worker-centric characteristics relevant to return to work success. The other three concepts, *human rights*, *seamless RTW process through collaborative communication* and *satisfaction of stakeholders other than*

worker reflect aspects about the process of returning to work that involved interactions and the nature of the interactions among people. These concepts are discussed below in reference to the literature and in advancing the current knowledge about successful return to work. Future research directions are suggested to elaborate on these concepts in developing the understanding of successful return to work and outcome measurement approaches.

Worker-Centred Concepts

The previous focus in the literature on return to work used the criteria of a worker being back at work as a marker of success (Krause, Frank, et al., 2001). The results from the stakeholder perspectives support the concept of worker performance as an important issue in RTW success. However, *worker performance* or ability to perform work was not the only domain about the worker. Two other concepts, *worker job satisfaction* and *worker well-being*, were also identified as important. All three of these concepts resonate with the discourse that underscores the activities and participation dimensions of the ICF. They reflect the importance of looking beyond the worker's ability to physically or cognitively perform job related tasks and instead consider the worker's ability to engage in satisfying and meaningful activities related to work, and life outside of work.

The worker satisfaction concept suggests that measures of success need to consider criteria that capture the worker's perceived satisfaction with their performance and the work they conduct upon returning to work, rather than solely equating returning to work as an endpoint measure of worker performance.

Further to this the worker well-being concept was interpreted based on statements that reflect that a worker can perform his or her work within the routines and demands of daily life. Contained within this concept is the notion that workers must be able to continue to function and participate in all daily routines as viewed from a biopsychosocial model of health. Thus, a worker's participation across the realm of that worker's normal activities in addition to successfully engaging in work is part of achieving RTW success. In future studies indicators of worker well-being and satisfaction might provide a basis for examining the sustainability of remaining at work after injury thereby informing current gaps in knowledge identified by others (Baldwin et al., 1996; Krause, Dasinger, et al., 1999; Pransky et al., 2005; Young et al., 2005).

Process-Centred Concepts

Results underscored that evaluations of RTW success must also address the process. Process centred considerations, that is those that looked at how the RTW program was implemented, were reflected in the *human rights*, *seamless RTW process through collaborative communication*, and *satisfaction of stakeholders other than workers* concepts. In the view of the stakeholders, human rights as a concept underpins the notion that the RTW process and the final work conditions are respectful and support the dignity of not only the injured worker, but of everyone who might be involved or affected by the RTW process. To be successful the RTW process itself needs to be characterized by a seamless method that is easy for worker's to participate in and that emphasizes a collaborative approach. All stakeholders also recognized that the process must

consider the satisfaction and respect of others, especially co-workers, for the RTW to be successful. These concepts suggest that multiple perspectives must be evaluated to capture the essence or the nature of the success of RTW.

The importance of process in RTW is not new. The notion that process is inextricably linked to RTW is consistent with the writings of Young et al. (2005) and Pransky et al. (2005). For instance, those two author groups have defined RTW as both a process and an outcome and asserted that RTW requires ongoing measurement during and upon completion of the process but specific indicators for measuring the effect of the process on outcomes are unclear. Young et al.'s developmental conceptualization of RTW does suggest however that outcome measurements across the phases of RTW need to be considered. Results from stakeholder consensus in this study provide further insights as to the nature of the process; that the seamlessness or making the process easy to participate in, experiencing collaborative and respectful interactions that consider the worker's and others' dignity are areas for formative evaluation of the overall success of RTW. These concepts indicate that measures of success might include examinations of the nature of the process and that the views of others involved in the process such as supervisors, co-workers, and RTW co-coordinators or support personnel may need to be included.

Limitations

This study was conducted with a small number of participants from Ontario, which may not be representative of all RTW stakeholders. However, the results of the study and observations made by the investigator in relation to

participant comments tend to be consistent with evidence from the RTW literature around stakeholder concerns. Significant efforts were made to recruit equal numbers of participants who represented RTW providers and consumers but it was far more difficult to recruit and maintain consumer participation throughout all steps of the study. Although consumers showed initial interest and appeared eager to tell their stories, they were not afforded that opportunity directly which may have resulted in the failure of some to participate in all steps of the study. Ideally it would have been preferable to have greater numbers of participants representing employers, insurers and the compensation board. Greater consumer, employer and/or compensation board representative participation may have resulted in different findings.

The number of participants in this study may have impacted the findings. However, given that the objective of the study was to develop a conceptualization there is no *truth* to the findings regardless of the total number of participants. The initial statement generation stage included 24 participants in total which is well-within the limits as defined by Kane and Trochim (2007) to produce reliable results. What appears to be a dropout for the sorting and rating step of the process, in fact was not. The concept mapping method is designed to handle different numbers of participants as well as different participants at various stages of the project. In the study reported on here all participants were invited to complete the sorting and rating task but as few as 3-4 key stakeholders can be used to provide meaningful results depending on the project at hand. The reader is advised to keep in mind that the process of creating a conceptualization is a

means to an end in encouraging stakeholders to create concepts from individual indicators of RTW.

The number of participants in the interpretation stage was slightly smaller (nine versus 10) than the minimum recommended by Kane and Trochim (2007) and ideally a larger group was hoped for. Unfortunately due to last minute cancellations and difficulty recruiting greater numbers of key worker or consumer participants, the stakeholder interpretation group was smaller than desired. The effect on results is not known, but it is certainly conceivable that different results could have been obtained with more and/or different participants.

Conclusion

The findings of this study indicate a definite need for RTW outcome measurement reform. The concepts generated in this study will be used in future research towards the development of some form of standard outcome measure for RTW. A study is planned that will bring together key RTW researchers from across Ontario to determine how best to utilize these findings in the development of an outcome measure and to explore with them how to approach measurement that can capture a broader realm of indicators across time that might more authentically lead to an understanding of what comprises a successful return to work. Further research is needed to explore the relevance of these concepts in a practical manner with various stakeholder groups who are going through the RTW process. In addition, those who consider themselves to have successfully returned to work might also provide more in-depth elaboration on the concepts uncovered in this study and add to the breadth of knowledge to inform future

measurement approaches for successful RTW. The nature of RTW is complex and it would appear that the trend to include multiple stakeholders in the planning, evaluation and implementation of RTW is the key to solving this puzzle.

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3. RTW OUTCOME IMPORTANCE RATINGS

Return to work (RTW) success is influenced by many interdependent factors (Friesen, Yassi, & Cooper, 2001) and each stakeholder has different expectations and objectives (Baril, Clarke, Friesen, Stock, & Cole, 2003; Franche, Baril, Shaw, Nicholas, & Loisel, 2005; Ståhl, Svensson, Petersson, & Ekberg, 2009; Young, Wasiak, et al., 2005). The existence of tensions, mistrust and varying perspectives among RTW stakeholders (Baril et al.; Beardwood, Kirsh & Clark, 2005; Ståhl, Svensson, Petersson, & Ekberg, 2010; Young, Wasiak, et al.) has led a number of RTW researchers to recommend inclusion of all stakeholder perspectives in RTW studies (Baril et al.; Frank et al., 1998; Young, Wasiak, et al.).

So far limited attention has focused on these differing perspectives in relation to the identification and measurement of successful RTW outcomes. Young, Wasiak, et al., (2005) identified the stakeholders and investigated how different RTW stakeholders defined a *good outcome* and what factors each used to determine if that good outcome had been achieved. Those researchers found that although the common goal was RTW, other competing goals were equally important, and that the environment in which the stakeholder operated influenced goals as well. Essentially Young and colleagues found that workers were most interested in overall well-being (including financial and emotional). For providers as a group (employers, health care providers, payers) the most common area of interest was related to financial viability. Individually within the provider group employers were most concerned with workforce productivity/satisfaction and

safety; health care providers with worker function; and payers with profitability. What is not reported is the awareness and perceptions each stakeholder group has of other groups' RTW goals.

Recent studies have shown that despite having a common RTW goal, distinct stakeholder groups define and approach the goal from differing paradigms, and conflicts or breakdowns in communication can occur due to a lack of insight into what one stakeholder feels is important (Ståhl et al., 2010; Tjulin, Edvardsson, Stiwne, & Ekberg, 2009). One of the major gaps in RTW research revolves around understanding how the goals of all stakeholders fit together to achieve successful RTW outcomes and how each stakeholder perceives the outcomes that matter to other stakeholders (Young, Wasiak, et al., 2005).

Little is known about how various stakeholders view common concepts of RTW outcomes and what they believe to be important. For example, we know that work resumption is not necessarily a successful outcome for workers who continue to experience limitations in their leisure and social lives, or for employers who may not be satisfied when a returning worker on permanent modified duties who produces less for the same salary (Levack, McPherson & McNaughton, 2004; Rudolph, Dervin, Cheadle, Maizlish & Wickizer, 2002). The perspective that is lacking is how important a worker considers the cost or productivity issues the employer is worried about and how important the employer considers the worker's life outside of work. These perspectives could

have a significant impact on evolving our understanding of not only RTW outcomes but also of interventions (Young, Wasiak, et al., 2005).

No previous studies could be located that involved the various stakeholder groups first identifying indicators of successful RTW outcomes and then rating the importance of those indicators. Recent research that involves participation of workers or other stakeholders focuses more on RTW programming and identifying barriers and facilitators of interventions but not on identifying measurable outcomes of the RTW program (Ammendolia et al., 2009; Ståhl et al., 2010; van Oostrom, van Mechelen, Terluin, de Vet, & Anema, 2009). In addition to focusing predominantly on RTW interventions, some of this RTW research employed individual interview techniques (Ståhl et al.), or the participatory nature was related to the form of intervention (van Oostrom et al.). Other studies involving participation of stakeholders have not performed importance rating or compared importance ratings between or among RTW stakeholders.

The objective of this paper was to first determine how the RTW stakeholders as a group rated the importance of indicators of successful RTW outcome and then to verify if consumers and providers have similar or differing views on importance and to identify each stakeholder group's perceptions of the other.

Method

The Concept Mapping Project

This was an exploratory study aimed at identifying the relative importance of previously generated indicators of successful RTW. The study reported here was part of the overall concept mapping project. Ethical approval for the project was granted by the University of Western Ontario Health Sciences Research Ethics Board [Appendix A]. This study represents the rating aspects of concept mapping and followed the standard concept mapping method (Kane & Trochim, 2007). The Concept Systems Inc. software program (www.conceptsystems.com) was used to manage the project and analyze data.

The results of the initial steps of the concept mapping project are reflected in Chapter 2 where RTW stakeholders generated 48 statements that indicated a worker had successfully returned to work. The statements underwent cluster analysis and then interpretation by the stakeholder participants, which resulted in six concepts of successful RTW. To clarify, the statements are grouped into common themes which then make up the concepts. The term *indicators of successful RTW* will be used to refer to individual statements and to concepts.

Importance Rating

The study reported here is concerned with the rating of the 48 statements generated. In the concept mapping method rating may be done across any criteria, for example importance, feasibility or impact and the intent is that the rating results be used to help interpret the conceptualization and to guide how the conceptualization can be utilized. For this study the focus was identifying the relative importance of indicators of successful RTW outcome among all stakeholders and between two major stakeholder groups; consumers and

providers of RTW services. Lastly the perceptions that each group had about what was important to the other group was investigated and compared the actual and perceived ratings.

Participant Inclusion Criteria

The consumer stakeholders were defined as workers, co-workers, family of injured workers and union representatives and legal representatives of injured workers. Provider stakeholders included any employer representative (manager, owner, and human resources personnel), health care providers and payer representatives. The 24 participants who had generated the 48 statements in the earlier study were invited to participate. These participants were selectively recruited for the earlier study based on specific RTW stakeholder category and group to ensure balanced representation of the various stakeholders. All participants were either RTW consumers or providers with fluent English language skills and at least five years of work experience in Ontario. Providers must have worked in the area of RTW for five years or more and workers must have personally experienced a RTW, be a co-worker of a worker who experienced a RTW, be a worker representative, or be a family member of a worker who experienced a RTW.

Procedure

Participants were mailed a list of the 48 statements that had been generated to complete the phrase “One thing that indicates a worker has successfully returned to work is…”. Using a 5-point Likert scale (1=relatively unimportant, 2=somewhat important, 3=moderately important, 4=very important,

5=extremely important) participants were asked to rate how important each statement was as an indicator that a worker had successfully returned to work. In addition, RTW consumers were asked to rate how important they thought the statement would be to providers, and providers were asked to rate how important they thought the statement would be to consumers. All participants who completed ratings forms also completed a brief questionnaire asking about stakeholder group and category, years of experience with RTW issues and knowledge of RTW policies in Ontario. The primary investigator was available by phone or email to answer any questions. Once completed participants mailed the forms back to the investigator.

Analyses

Overall ratings. The rating data was entered into the Concept Systems software for analysis. First, average importance ratings for each statement were computed across all participants. In the earlier study participants had grouped the statements into clusters based on a common theme, which they then named. Those clusters became the six concepts of successful RTW outcome. In this study the participants only rated the statements but the concepts were rated based on the average rating of each statement contained in the concept. To compare ratings between consumers and providers, average ratings per statement and concept were computed within each stakeholder group. Correlations between the two groups were made based on the ratings of the 48 statements.

Go-zones. In the concept mapping method the average importance rating for both consumer and provider groups on each statement is plotted on a graph. This graph is referred to as the go-zone graph; so named for the upper right quadrant which appears as a shaded area. The shaded quadrant represents the area of the graph that falls above the average statement rating for each group of stakeholders. The average rating for each group is indicated as a shaded line on the graph. The placement of the line (average rating of all statements per stakeholder group) is computed by dividing the sum of all average statement ratings within each group by the number of statements. The numbers along the x and y axes indicate the range of rating scores and the average ratings. The go-zone graph can assist in identifying agreement and disagreement between the two groups. If generation of a questionnaire is deemed necessary, items falling within the go-zone could be used for this purpose (Kane & Trochim, 2007).

Pattern matching. Ratings for statements contained in each concept and for all concepts are presented in the form of a pattern matching ladder graph. The pattern matching ladder graphs (see Figure 3.3) compare the average ratings by concept between providers and consumers (for a list of statements in each concept see Table 3.1). The pattern refers to the overall importance ranking by either consumers or providers of each concept based on the rating of importance of each statement contained in each concept. Matching the patterns involves comparing the rankings between the two groups. The ladder graph provides an easy way of making this comparison by identifying which concepts show the greatest consensus or disconnection.

The values at the top and bottom of the vertical sides of the ladder show the range of average ratings out of 5 from the Likert scale. Using average statement ratings the two patterns are compared with a Pearson product-moment correlation, which indicates the strength of the match between the RTW consumer and provider ratings and is displayed at the bottom of the ladder graph. The closer the correlation value is to 0 the less the groups match. The closer the correlation is to 1 the more similarly the two groups rated importance. Negative values imply an inverse relationship (when one measure is high, the other is low and vice versa). Together, the ladder graph and its correlation describe the relationship between the patterns of the two groups of participants. Criteria for evaluating the correlations were as follows; an *r* value greater than .75 is good to excellent agreement, from .75 to .50 is moderate to good, from .50 to .25 is fair and from .25 to .00 is little to no agreement (Gross Portney & Watkins, 2000).

It should be stressed that the developers of the concept mapping approach warn against placing too much emphasis on the correlations and intend the correlations to be used only as a guide to assist with interpreting the statements or concepts towards achieving the project goal (Kane & Trochim, 2007). The project goal in this case is identifying RTW outcomes of interest and importance to all stakeholders. The rating study helps to refine that identification among and between stakeholder groups.

Results

Participants

Fifteen participants (n=15) were included in this exploratory rating study; nine RTW providers (disability manager/occupational health nurse (2), employer/manager (2), insurance adjuster (1), occupational therapist (2), physical therapist (2)) and six RTW consumers (injured worker (3), family member of injured worker (1), injured worker representative (2)). Self-rated knowledge of current RTW policies ranged from poor to excellent, with 73% of responses (11 participants) in the good to excellent range. Two participants reported fair knowledge and only one reported poor knowledge. One participant did not answer the question. The years of experience ranged from 4.5 to 20 years.

Importance Ratings

Combined statement ratings. Table 3.1 summarizes the average importance rating per statement and concept of all participants (note that the number assigned to statements reflects the order of generation in the earlier study and has no value otherwise). The average ratings for statements ranged from 4.73/5 to 3.20/5 (1=relatively unimportant, 2=somewhat important, 3=moderately important, 4=very important, 5=extremely important). The highest rated statement (4.73/5) was “the worker is able to maintain his/her recovery”. The next highest rated statement at 4.6/5 was “the worker's human & charter rights are intact and respected by all return to work stakeholders”. Conversely the lowest rated statement at 3.20/5 was “the worker is able to identify rewarding job attributes and is taught to remind him/herself of why he/she enjoys coming to work each day”.

Table 3.1 RTW consumer and provider combined average importance rating per statement[1] and concept

Statement Number	Statement	Importance Rating
	Concept: Worker Performance **Average - 4.27**	
*3	the worker is performing his/her assigned work at a level that is equal to what any healthy employee would be expected to do.	4.53
*28	the worker can complete required duties without a significant increase in his/her pain or discomfort level.	4.47
*10	the worker is earning a wage that is comparable to the pre-injury wage.	4.47
*1	the worker is performing his/her pre-injury/illness job or occupation.	4.47
*26	the worker's ability to perform the tasks or job he/she performed prior to the injury.	4.40
27	the worker is performing permanent and sustainable work (i.e. the job itself is a regular, permanent position and it is the job the worker will be doing on a permanent basis).	4.33
12	the worker is able to sustain the work for a period of time defined by type of injury and illness as supported by data on injury/illness recurrence rates (e.g. for low back pain worker should sustain work for 3 years, for depression 1 year, etc.	4.13
48	the number of hours being worked by the worker is comparable to pre-injury/illness.	4.13
29	the ability to work entire shift without causing interference into the worker's other life roles.	3.93
^11	the worker is able to work 85% or more of the pre-accident essential duties.	3.80
	Concept: Worker Well-being **Average 4.30**	
*30	the worker is able to maintain his/her recovery (mental health or physical injury).	4.73
*39	the worker will have suffered NO 'secondary wounding' (e.g. neither the RTW process nor the work being performed causes a new or recurrent injury or illness including mental health issues).	4.40
*40	the maintenance of the worker's self worth.	4.33
43	regardless of degree of injury/illness the worker reports and demonstrates psychological, mental and physical well-being.	4.27
*21	the worker is able to return to function in all aspects of life that the worker identifies as important to him/her.	4.20
*14	the worker is not sacrificing other life roles just to be able to work.	4.20
^46	the worker has reached maximum recovery from his/her injury or illness.	3.93

	Concept: Human Rights	**Average - 4.15**
*42	the worker's human & charter rights are intact and respected by all return to work stakeholders.	4.60
*38	the worker's physical and medical restrictions are respected in accordance to what the worker's own health care professionals recommended.	4.47
35	the worker suffers no adversity or conflict from the employer.	4.27
36	the worker suffers no adversity or conflict from the insurance carrier.	4.07
34	the worker's workplace injury and modified duty assignments do not cause stigma in the workplace.	4.07
^37	the worker's wishes and input were respected when training was offered as a second career (employers, insurance carriers, LMR providers & adjudicators).	3.87
41	the worker will be treated as an asset by the employer.	3.73
	Concept: Satisfaction of Stakeholders other than Worker	**Average - 3.80**
*5	the employer is satisfied with the work being performed by the worker.	4.33
9	all stakeholders feel that the worker is performing work that is productive.	4.07
8	all funding sources/insurers and other external stakeholders are satisfied with what the worker is doing	3.87
^6	the co-workers are satisfied with the work being performed by the worker.	3.87
^7	all health care providers are satisfied and agree with the duties and type of work the worker is doing.	3.60
^31	no co-workers are disadvantaged by the (temporary/ permanent modified or accommodated) work duties being performed by the worker.	3.53
^45	a discontinuation of or significantly reduced, insurance benefits being paid to the worker.	3.33
	Concept: Worker Job Satisfaction	**Average - 4.08**
*4	the worker is satisfied with his/her work performance.	4.40
*33	the worker is able to effectively self-manage any ongoing issues (e.g. pain, anxiety) while remaining productive in the workplace.	4.40
*2	the worker has returned to alternative work that is meaningful to the worker.	4.33
13	job satisfaction of the worker.	4.20
24	the worker actually wants to be working.	4.07
27	colleagues are accepting and welcoming of the worker in the same way that they were prior to the injury.	3.93
^20	the worker is able to identify rewarding job attributes and is taught to remind him/her self of why he/she enjoys coming to work each day.	3.20

	Concept: Seamless RTW Process through Collaborative Communication	**Average - 4.21**
*16	during the RTW process there was ongoing transparent, accurate and complete communication between the worker and all stakeholders.	4.67
*17	evidence of ongoing positive, transparent communication between the worker and the workplace contact, which was initiated early by the employer.	4.53
25	during the RTW process a team approach was used to rehabilitate the worker back to all aspects of functioning.	4.33
*15	that the worker had a personalized RTW plan developed with input/agreement from all stakeholders, especially the worker.	4.27
*32	the worker's supervisor understands and is educated regarding work disability prevention as it relates specifically to the worker's barriers.	4.27
18	the worker can demonstrate an understanding of the system and the potential to prevent future lost-time from work by identifying, anticipating, and mediating future potential barriers.	4.20
*19	the worker has access to a designated, experienced and skillful RTW person that the worker can contact as needed.	4.20
44	regardless of degree of injury/illness the worker has access to on-going support needed to cope with the life alteration as a result of his/her injury/illness.	4.07
23	the worker is able to identify who his/her advocate is.	4.00
^22	all aspects of the worker's life have been assessed and treated as needed.	3.60

[1] Statements were generated during earlier study in response to being asked to complete the sentence “One thing that indicates a worker has successfully returned to work is…”

* Statements falling into the “go-zone” - rated above average for importance by both consumers and providers and (see Figure 3.2)

^ Statements rated below average for importance by both consumers and providers (see Figure 3.2)

Combined concept ratings. Table 3.1 also contains the average rating of all stakeholders for each concept, based on the combined average of each statement that is contained in the concept. All but one average concept rating falls into the very important range (4.08 – 4.30). The average importance rating for the concept *satisfaction of stakeholder other than worker* was 3.80. The average importance rating for all participants per concept is better illustrated by viewing the cluster rating map (Figure 3.1). The more layers in each cluster the higher the importance rating relative to the other cluster ratings. The number of layers does not correspond to the actual numbers from the Likert scale. *Worker well-being, worker performance* and *seamless RTW process through collaborative communication* all have five layers indicating the highest average ratings of importance compared to the other clusters (4.30, 4.27 and 4.21). *Human rights* has four layers with an average importance rating per cluster of 4.15, followed by worker job satisfaction with an average rating of 4.08.

The go-zone. The graph in Figure 3.2 illustrates the average rating per statement by consumers and providers. The average ratings per statement for consumers, found along the x axis, range from 3.86 to 5 with an average rating for all consumer rated statements of 4.47. Provider ratings, along the y axis, range from 2.63 to 4.63 and average 3.86. There are more numbers than dots as some statements have the same coordinates. The statements that correspond to the numbers on the graph can be found in Table 3.1. The 21 numbers located in the upper right go-zone quadrant correspond to statements rated above average (as indicated by the shaded lines) on importance to RTW success by both

consumers and providers. The statements contained in this go-zone are indicated by asterisks in Table 3.1.

Figure 3.1 Cluster rating map

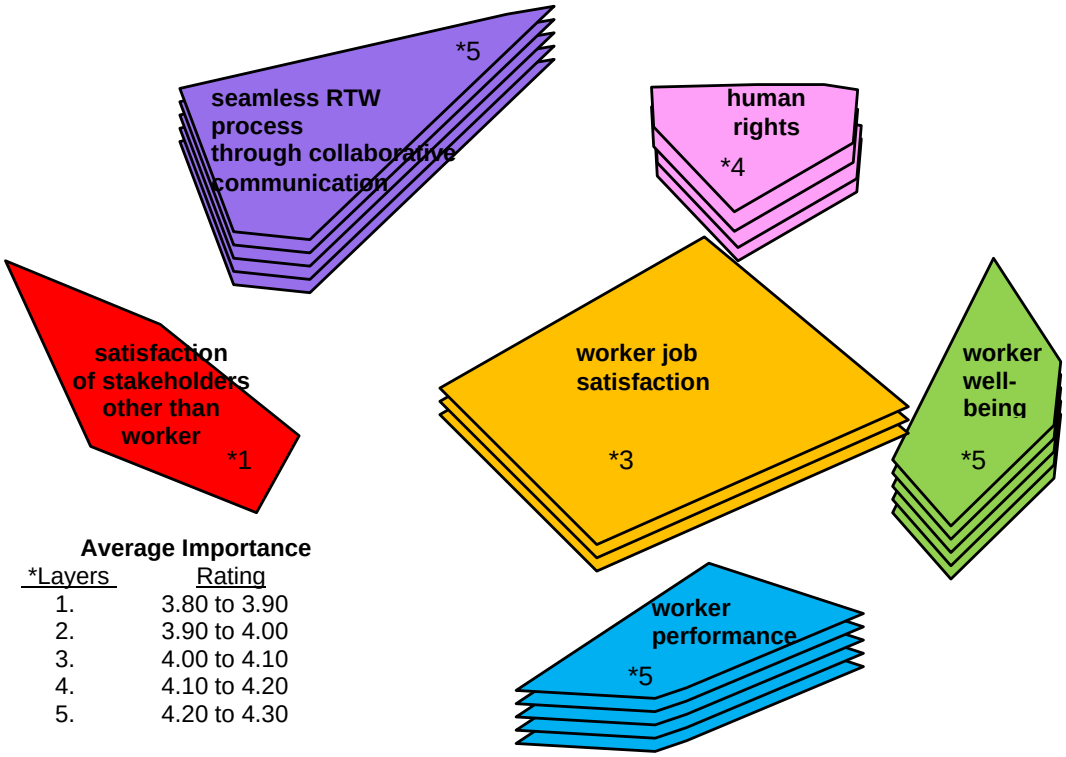
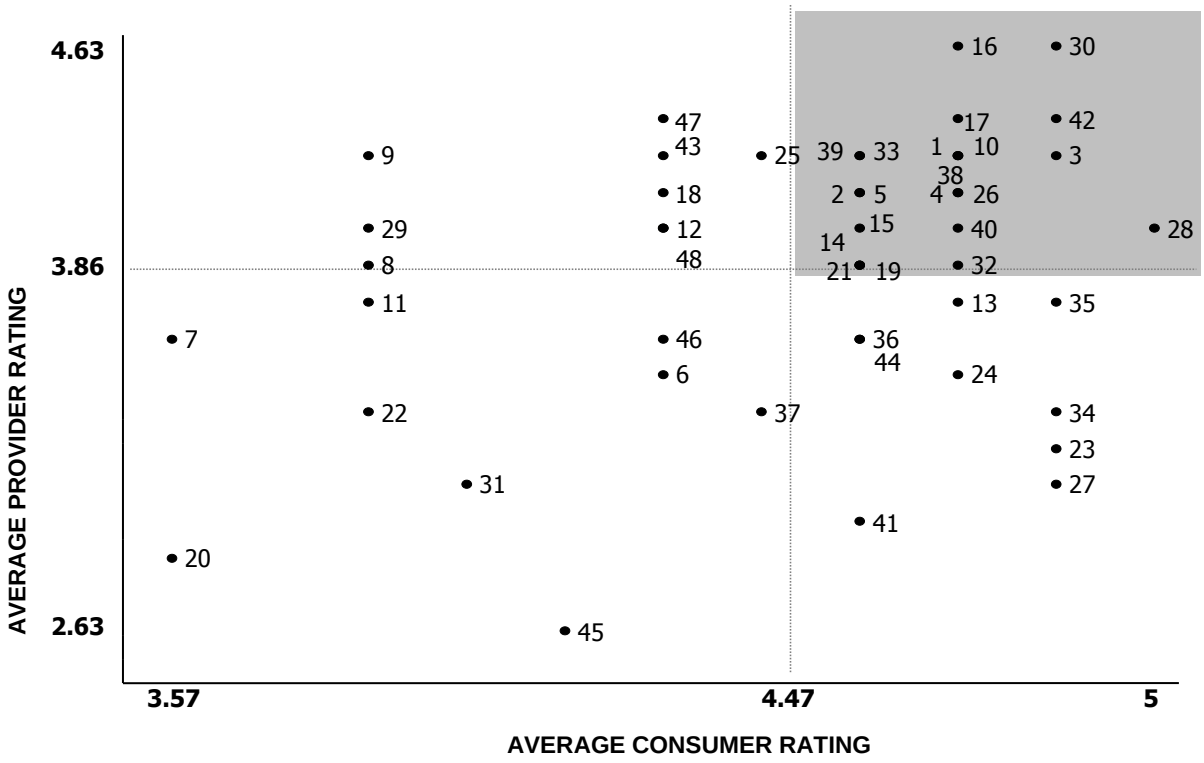


Figure 3.2 Go-zone graph showing average importance ratings of each statement



Consideration of importance rating based on concepts revealed that three concepts had five statements in the go-zone: *worker performance, worker well-being* and *seamless RTW process through collaborative communication*. The following concepts had one, two and three statements respectively in the go-zone; *satisfaction of stakeholders other than worker, human rights* and *worker job satisfaction*.

Statement numbers that are located in the lower left quadrant are rated below average on importance by both groups. There are nine statements that were rated below average by both RTW consumers and providers, which are indicated in Table 3.1 by the circumflex symbol (^). Most concepts included only one statement each in this quadrant except *satisfaction of stakeholders other than worker* which had four.

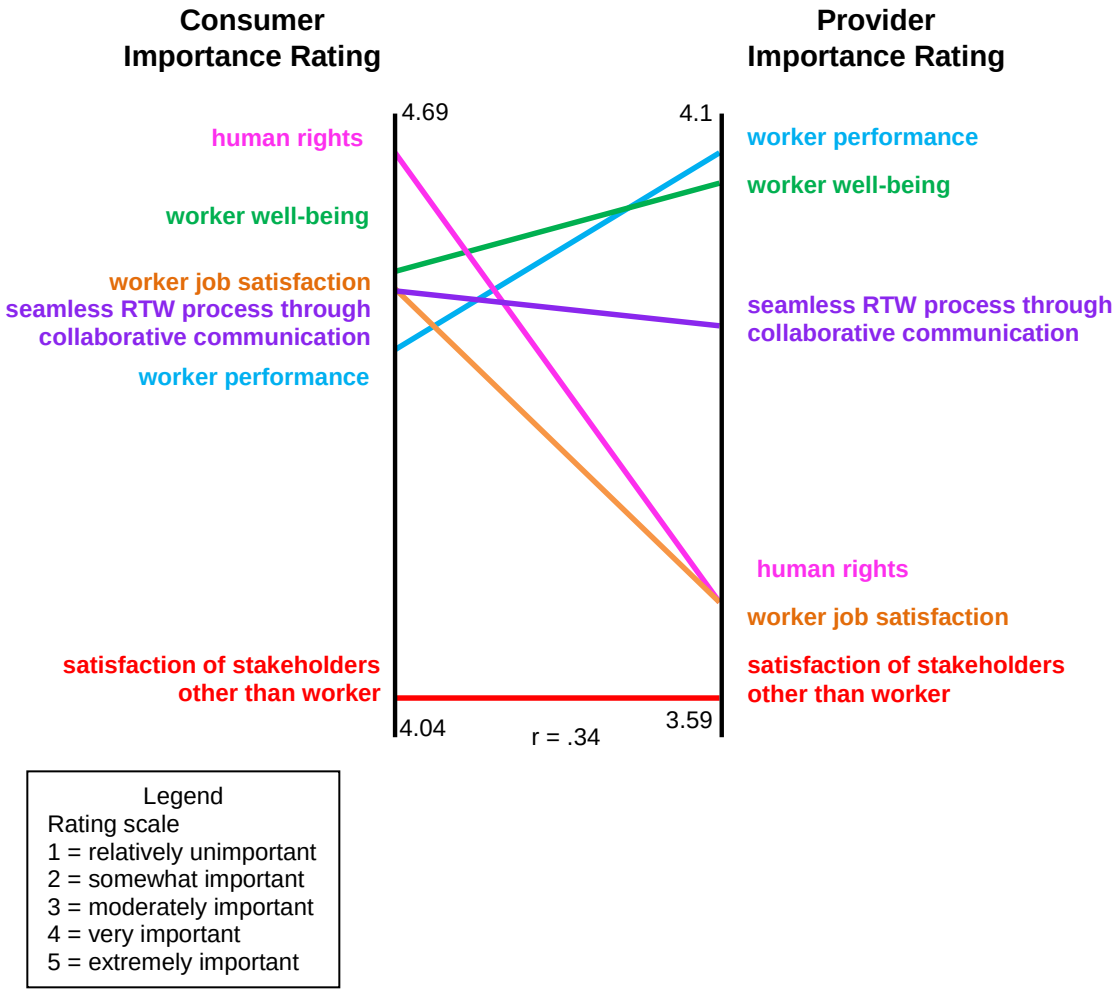
Comparing importance ratings. The graph in Figure 3.3 illustrates how the concepts were rated by consumers and providers, keeping in mind that participants only rated actual statements, which had been grouped into concepts in the earlier study. At the concept level average importance ratings for providers ranged from 3.59 to 4.10, somewhat lower than for consumers which ranged from 4.04 to 4.69. A straight line connects each concept's average rating for the RTW consumer group on the left with the average rating of the RTW provider group on the right. The more horizontal the line linking consumers and providers the greater the agreement and the more the graph looks like a ladder. Poor agreement is displayed by lines with a more vertical orientation. The Pearson correlation (r =.34) at the bottom of the graph indicates fair agreement between importance rating of RTW consumers and providers overall and is significant (p< .01).

This study also reveals an innovation of the concept mapping method with respect to identifying the role of participants. Generally participants are classified as belonging to one of two groups. In the case of RTW there are instances where RTW providers are also consumers and possess a unique perspective reflecting both groups. The concept systems program does not allow participants to categorize themselves in both groups so in this study the data of participants who were identified as both consumers and providers were given a unique identifier so that they could be analyzed in either group and in both groups. It was ultimately determined that results were not significantly different depending on in which group these participants' data were analyzed. Since they had self-

identified as providers the data were analyzed as such. However, it does reveal that the concept mapping method can be adapted to handle a third group to reflect perspectives of both groups.

The greatest discrepancy can be seen with the concepts of *human rights* and *worker job satisfaction* with consumers rating these higher than providers. *Satisfaction of stakeholders other than worker* was ranked as least important by both groups. W*orker well-being* and *seamless RTW process through collaborative communication*. The highest rated concept for providers was *worker performance* and for consumers was *human rights*. Both groups rated *worker well-being* second most important.

Figure 3.3 Relative importance ratings of consumers and providers



The ladder graph in Figure 3.3 depicts average importance ratings for consumers. Consumers were asked to rate how important the statements were to indicating a worker had successfully returned to work and providers were asked to rate how important they thought the statements were to consumers. The Pearson correlation co-efficient of 0.77 ($p < .05$) indicates that the two groups were in good agreement with what was and was not thought to be important to consumers. The best agreement was for the concept *satisfaction of stakeholders other than worker* as indicated by the almost horizontal line at the bottom of

graph. The line just above that horizontal line is the longest and most vertical. It represents the most discordant concept *seamless RTW process through collaborative communication*, which was rated higher by consumers than providers perceived they would rate it.

Conversely Figure 3.5 demonstrates the importance rating of providers on the right versus how important consumers thought the statements were to providers on the left. The poor correlation (r=.01, p>.05) indicates little agreement. *Worker performance* ratings showed the greatest level of agreement as it was rated most important by providers and perceived by consumers to be most important to providers. *Worker well-being* and *seamless RTW process through collaborative communication* were rated more important by providers than consumers perceived providers would rate them. The ratings of *worker job satisfaction* and *human rights* also had relatively good agreement between the two groups. Providers rated *satisfaction of stakeholders other than worker* less important than consumers perceived they would.

Figure 3.4 Relative importance to consumer as rated by consumers and providers

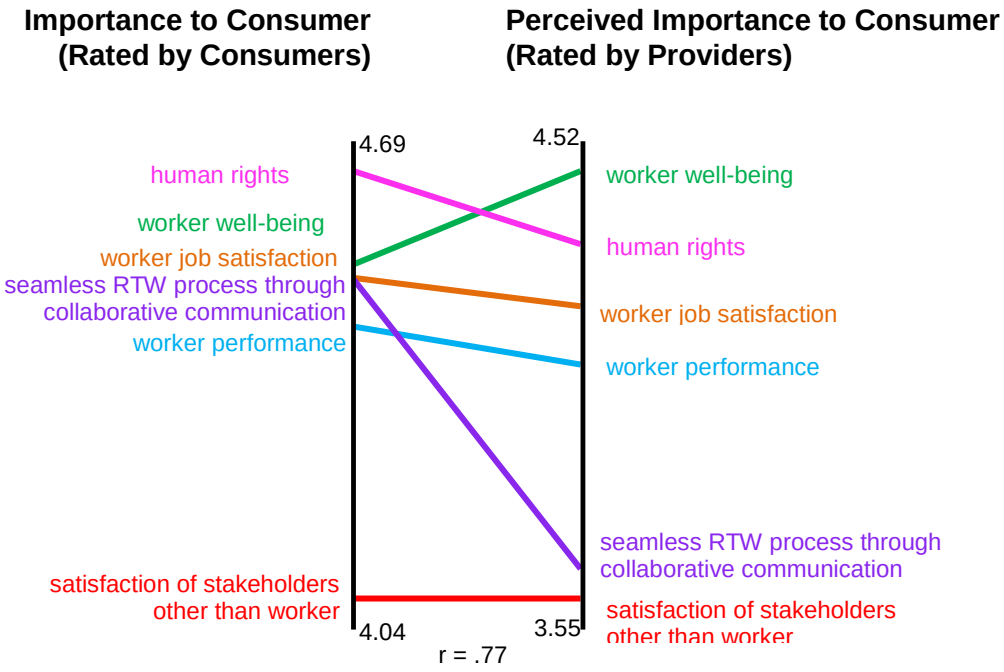
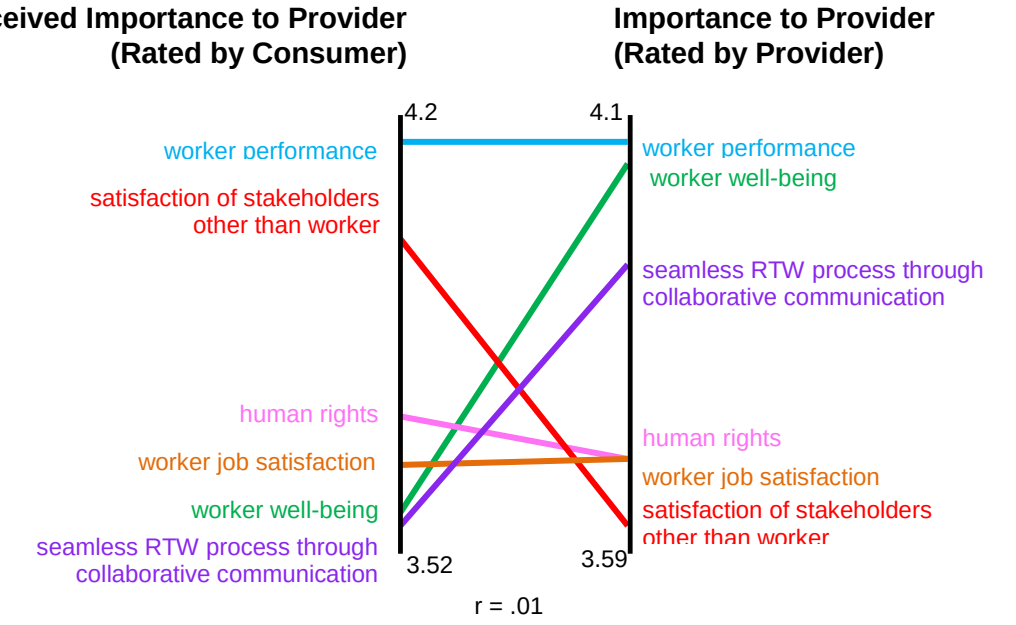


Figure 3.5 Relative importance to provider as rated by providers and consumers



Discussion

This study identified the relative importance of indicators and concepts of successful RTW outcomes for stakeholders as a group and for consumer and provider groups. This study is unique in that the results are not specific to a particular medical condition, work setting or benefit program and the RTW indicators that underwent the rating had been generated by stakeholders and not researchers. The results can be used in planning, implementing and measuring RTW programs as they provide further knowledge into what is important to stakeholders and offer insights to direct future definitions of successful RTW outcomes and possible measurements.

Importance Ratings Among All RTW Participants

Stakeholders tended to assign greater importance to statements that were more concrete in nature, and perhaps ultimately easier to measure. Ranking based on the importance ratings from highest to lowest by concept was; *worker well-being, worker performance, seamless RTW process through collaborative communication, human rights, worker job satisfaction* and *satisfaction of stakeholders other than worker*. Overall importance ratings suggest that as a group, stakeholders deem the overall health of the worker as the most important concept, but neither group individually rated this concept as most important. Both groups rated worker well-being second most important but when ratings were combined this concept received the highest rating. The statements making up this concept (see Table 3.1) relate to the worker's ability to participate in all life roles (physical, mental and social well-being) and ensuring that the worker's

health does not deteriorate as a result of resuming work. Perhaps even more interesting is the result that *satisfaction of stakeholders other than worker* was the lowest rated concept, even among those other stakeholders. Young and Wasiak et al. (2005) identified financial viability as the most commonly reported interest of stakeholder groups other than workers, but their study was not directly related to successful RTW outcomes. The results of this study show that when all stakeholders' interests are combined, financial viability was barely mentioned and certainly not identified as an important issue relative to other indicators of a successful RTW outcome.

The actual statements that were rated highest on average by all stakeholders (go-zone statements from Figure 3.2) tend to be relatively objective and concrete compared to the lowest rated statements. Most of the go-zone statements relate to the worker's ability to function at work and away from work in relation to physical, mental and social parameters. Within the International Classification of Functioning, Disability and Health (ICF) model of disability many of these statements tend to fall into the participation category (World Health Organization, 2001). Statements that were rated below average tended to be ones that in the earlier study posed difficulty for some participants in terms of what cluster the statement fit into. In the concept mapping method no statements are rejected during the statement generation session, but during the rating task statements that participants tend not to like or agree with are typically rated very low. Included in the statements that were rated below average by the group as a whole was the statement "*the worker has reached maximum recovery from*

his/her injury or illness". This result was somewhat surprising given that anecdotally the lack of full recovery is often a reason given by injured workers and their advocates (including health care professionals) for not returning to work. Also found in the below average rated statements was "*a discontinuation of, or significantly reduced insurance benefits being paid to the worker*." This result is of interest since a change in benefit status is one of the most commonly used outcome measures for RTW (Krause, Frank, Dasinger, Sullivan, & Sinclair, 2001) and the results from this study suggest that perhaps it is not a good indicator of successful RTW.

The overall average importance ranking of the concepts from highest to lowest was as follows; *worker well-being, worker job performance, seamless RTW process through collaborative communication, human rights, worker job satisfaction* and *satisfaction of stakeholders other than worker*. Based on the results contained in the cluster rating map (Figure 3.1) five of the six concepts of successful RTW were rated on average in the range of very important by participants. The highest rated concept was *worker well-being,* which deals with issues related to the general health of the worker. Following closely on importance was *worker performance,* which deals with the worker performing job tasks in a manner similar to pre-injury. The concept *seamless RTW process through collaborative communication* was rated as third most important and relates to how the RTW process was implemented. *Human rights*, which focuses on the respect and dignity with which the worker is treated was rated fourth. The concept *worker job satisfaction* was also rated within the very important range but

slightly lower relative to the above statements. This concept is related to the pride and satisfaction the worker obtains from engaging in the job the worker returned to. The final concept, which was rated on average in the moderately important range, was *satisfaction of stakeholders other than worker*. This concept relates to how comfortable the other stakeholders are with the type of work the worker is performing and worker's performance of that work.

When taken as a whole *worker well-being* was rated as the most important concept, albeit only by a very slight margin over *worker performance* and *seamless RTW process through collaborative communication*. The overall health of the worker should be most important, yet it is seldom an outcome used to evaluate RTW outcomes or specifically successful RTW (Krause et al., 2001; Rudolph et al., 2002; Young, Wasiak, et al., 2005). Once again, worker's often report or perceive that employers and payers have no concern for the worker's health and well-being (Beardwood et al., 2005) yet the results of this study suggest that might not be the case.

Ratings Between Consumers and Providers

Consumers placed more importance on factors that have a direct and immediate effect on the worker. Perhaps the most novel result from this project is that consumers placed the highest degree of importance on the concept of *human rights*; how the worker is treated in terms of basic rights, dignity and respect, with the worker's well-being ranked second in importance. Baril et al. (2003) reported that maintaining the worker's respect was important to the RTW process but the degree of importance in comparison to other concepts of RTW

outcome has not been identified before in the English language literature. For example, Young and Wasiak et al. (2005) suggested workers approach RTW from a well-being paradigm and cited numerous studies that identified various worker related outcomes but none appeared to identify the basic idea contained within this current studies' concept of *human rights.* An argument might be made that maintenance of the worker's rights, respect and dignity are part of the worker's overall well-being but the participants in this project viewed them as two separate concepts. The manner in which the injured worker is treated is clearly of paramount importance to consumers in this study and seen as a more important issue than the worker's health. This finding suggests that very clear definitions of the concepts will need to occur before the concepts are put into use towards measuring successful RTW outcomes.

Based on the literature (Young, Wasiak, et al., 2005) it was thought that providers would assign the highest importance ratings to concepts that directly related to their own interests. Young and Wasiak et al. reported that employers are most concerned with productivity, health care providers with worker function, and payers with financial and social costs. Providers did rate *worker performance* highest, which contains statements related to both productivity and function but surprisingly rated the concept of *satisfaction of stakeholders other than worker* lowest. Four of the seven statements making up the concept were rated below average by providers.

Given the paradigms from which each group approaches RTW the correlation indicating fair agreement between provider rated importance and

consumer rated importance is not surprising. What is more interesting and perhaps useful are the perceived importance ratings (Figures 3.4 and 3.5). Providers were able to perceive how consumers would rate importance (r = 0.77) much better than consumers were able to perceive providers' importance (r = 0.01). The providers' perceived importance ratings for consumers reflects that they are more aware of what consumers want or need that has been previously reported (Baril et al., 2003).

Limitations

It is possible that provider participants had an under-representation of employer and payer stakeholders and responses of the health care professionals in the provider group were over-represented. This could possibly be related to the fact that the provider stakeholder group was comprised of quite diverse stakeholders and may have lacked a true employer perspective.

The provider group may have had an advantage as health care professionals were grouped with employers and insurers and they often have more insight into how workers and families are coping and what they are dealing with during a RTW. Consumers were made up mostly of workers and co-workers of an injured worker. This group likely has less insight into the issues that providers deal with however, even when some sub-groups were taken out of the rating data the results were not significantly different. It may be that education and knowledge translation around RTW issues has been more successful in reaching providers than consumers.

Conclusion

The results of this study will provide valuable information towards improving RTW outcome measures, but can also be useful to improve planning and intervention of RTW programs. The results that indicate providers have a better perception of what is important to consumers than consumers have of providers suggests that more education needs to be focused on the RTW consumers in terms of what issues the providers find important. Sharing these findings with all stakeholders could help to change consumers' attitudes by increasing their awareness of providers' cognizance of issues deemed important to consumers. Previous studies that involved multiple RTW stakeholder groups have focused more on implementation of the RTW program and not on outcomes (Ammendolia et al., 2009; van Oostrom et al., 2009). The most novel finding from this study is the fact that workers placed the highest degree of importance on the concept referred to as *human rights*, which relates to not only the worker's rights being maintained during and after the RTW process has ended but that the worker is treated as an integral part of the team, included in all decisions and that the worker is respected by the other stakeholders.

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4. CONSTRUCTING A THEORETICAL RTW OUTCOME EVALUATION

The evaluation of RTW programs has generally lacked a theoretical base, which has been suggested as an explanation for why there are problems surrounding RTW outcomes (Franche, Baril, Shaw, Nicholas, & Loisel, 2005; Krause, Frank, Dasinger, Sullivan, & Sinclair, 2001; Pransky, Gatchel, Linton, & Loisel, 2005; Shaw, Segal, Polatajko, & Harburn, 2002; Young, Roessler, et al., 2005). Concept mapping is one method of creating a theory-based program evaluation (Kane & Trochim, 2007), which is critical in helping to understand why and how a program works (Farris, Will, Khavjou, & Finkelstein, 2007; Weiss, 1997). Theoretically based program evaluations lead to clear and understandable goals, which in turn allows for the development of psychometrically sound outcome measures (Chen & Rossi, 1987).

To establish a theoretical base for RTW program outcome evaluation this study undertook to construct a conceptualization of successful RTW outcome using stakeholder, researcher and investigator perspectives, which was represented in the form of a logic model. The logic model provides a means of visual representation for all stakeholders to see what the program hopes to achieve. The logic model makes it easier to understand not only what needs to be measured as an outcome but also aides in the planning and implementation of RTW programs (Kane & Trochim, 2007). Since RTW program evaluation has not traditionally been based in theory (Young, Roessler, et al., 2005; Wasiak et al., 2007), there is a lack of standard, reliable and valid measurement of

outcomes (Chen & Rossi, 1987; Lipsey, Crosse, Dunkle, Pollard, & Stobart, 1985).

Literature Review

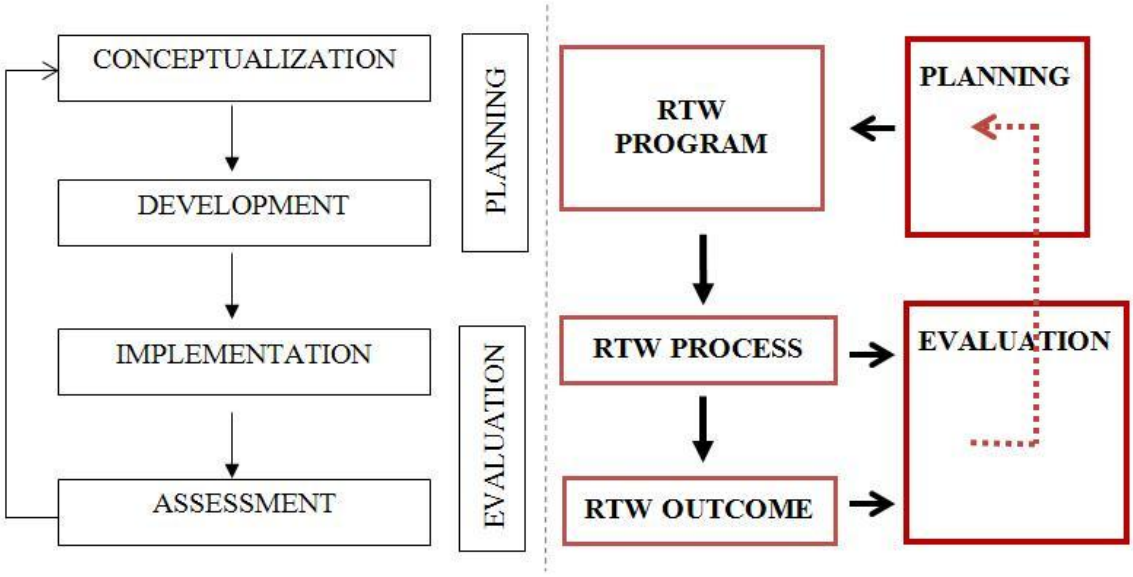
Program Evaluation

Patton (1997) defines a program as an intervention that aims to change something. In the case of RTW the program aims to prevent disability by changing work disability into work ability. Process evaluation addresses the implementation stage of the program and includes development of process measures for use in program monitoring and immediate program outputs whereas outcome evaluation is concerned with the overall assessment of a program and requires development of program output and outcome measures and their use in estimating longer-term effects of the program (Kane & Trochim, 2007; Patton). Outcome evaluation focuses on the direct as well as the indirect or unintended goals and objectives of the program (Chen & Rossi, 1987).

To better understand and differentiate the various stages of a program it is helpful to review Figure 4.1, which illustrates the stages of a typical project and shows where the process and outcome stages of the RTW program would appear. It is fairly clear what indicates commencement of the RTW program, that being the onset of work disability. It is not clear what indicates that the process has ended and outcome begins, hence the need for clearer program theory. Confusing process and outcome evaluation is reported to be a common problem (Patton, 1997) and appears in the RTW literature (Schultz, Stowell, Feuerstein, & Gatchel, 2007; Wasiak et al., 2007). The tendency to confuse process and

outcome evaluation is perhaps not surprising as they can be viewed as a continuum in the program evaluation (Kane & Trochim, 2007).

Figure 4.1 Life cycle of a project* on the left and RTW program on the right (in red reflecting where RTW process and outcome fit into the cycle)



(* Reproduced with permission from Kane & Trochim, 2007)

To add to the confusion of process versus outcome evaluation there are also issues related to outputs versus outcomes. Outcomes are changes that result from program activities and can include changes in attitude, behaviour, knowledge, skill, status or function (Kellogg Foundation, 2001). Typically outcomes are measured at the level of the individual. Outputs on the other hand are direct results of program activities and are usually described in terms of size, scope of services, and products delivered or produced (Kellogg Foundation). Many of the measures such as amount of disability payments, number of lost work days and similar measures are likely more representative of outputs than outcomes.

Theory-based program evaluation was recognized during the 1980s and 1990s as an important aspect of successful programs (Cacey, 1995; Chen & Rossi, 1983, 1987; Lipsey et al., 1985; Patton, 1997; Trochim, 1989). Theories and conceptualizations provide a way of structuring observations or solving problems and of linking ideas to practice (Dewey, 1938; Kane & Trochim, 2007). Dewey emphasized that theories and conceptual frameworks are not truths but rather tools with which to structure inquiries. A conceptualization may be thought of as an objective representation of thoughts and ideas (Trochim) and a logic model is one method of conveying the conceptualization in visual or diagrammatic form (Kane & Trochim; Kellogg Foundation, 2001). A logic model is simply a diagrammatic representation of a program theory and in the case of outcome evaluation theory illustrates the outcomes, outputs and impacts of the program, typically along a timeline.

The program theory provides a formal description of the concept and design; examining how the program is organized and will lead to desired outcomes, and providing a way of identifying short- and long-term effects (Patton, 1997; Rossi, Lipsey, & Freeman, 2004). Successful programs usually have clearly defined realistic and achievable goals and objectives in addition to relevant, credible and useful methods of measuring the goals and objectives (Patton; Kellogg Foundation, 2001).

In the world of program evaluation practitioners have generally focused on program implementation as it affects an individual, while researchers have concentrated predominantly on theory development and testing (Brown Urban &

Trochim, 2009). Theory-driven evaluation is a method of melding practice and research approaches and perspectives, with concept mapping being an accepted approach for the theory development (Brown Urban & Trochim). According to Brown Urban & Trochim one of the most common and highly regarded methods of creating the program theory is through the use of logic models.

Representing the program theory in the form of a logic model makes it accessible and easy to understand to all potential users. Logic models can be used for findings flaws in the theory and possibilities to correct those flaws, creating an easily understood picture of what the program is all about and how various aspects fit together, highlighting the links between action and results and engaging stakeholders to participate in the design, implementation and use of evaluation (Kellogg Foundation, 2001).

When all stakeholders have a shared and clear understanding of the proposed and anticipated outcomes of a program, better communication, commitment and program implementation are much more likely to follow (Kane & Trochim, 2007; Patton, 1997). In regard to both process and outcome Patton uses the adage “what gets measured, gets done” (p. 91). If all of the stakeholder identified concepts of RTW outcome are going to be measured in some manner then the chances of attention being paid to each of those concepts during the program implementation improves significantly. In turn the opportunity for a successful RTW outcome also improves (Patton).

Current RTW Outcome Measures

Most RTW outcomes have been measured by indicators like, time lost from work, time on disability benefits, or nominal statistics such as whether or not the worker is working at a certain date post-injury, which have been referred to as administrative data (Krause, Frank, et al., 2001; Krause, Dasinger, Deegan, Brand, & Rudolph, 1999; Leyshon & Shaw, 2008). In terms of outcomes, as defined in the preceding paragraph, at most these measures reflect a change in the worker's status and they may in fact actually be measuring outputs. These administrative-type measures could also be classified as service-focused goal-based program objectives and they are of interest predominantly to the payers of the programs (Patton, 1997). Regardless of how these measures are classified, for many stakeholders, particularly workers, supervisors, health care providers and researchers they convey no meaningful or useful information relative to the worker's overall well-being and work-related functioning (Schultz et al., 2007; Wasiak et al., 2007; Young, Wasiak, et al., 2005).

RTW Conceptualization

It is generally accepted by leading researchers that RTW models should be transdisciplinary and biopsychosocial (Loisel et al., 2001; Schultz et al., 2007). A review of health and disability models found that as conceptual models of RTW most were lacking these key elements and those that fit the criteria offered very little information on outcomes (Schultz et al.). Schultz and colleagues suggested that development of future RTW models account for the temporal and

multidimensional elements of occupational disability and the models should be multivariable, parsimonious, valid, generalizable, reliable and ecologically valid.

From a clinical perspective biomedical assessments are often used to evaluate outcome of treatment and/or determine work disability and while these may be useful for determining impairment they are not overly useful in determining work disability or ability (Benjamin, 1998). Impairment relates to more physiological and perhaps psychological function but fails to take performance of actual life activities and context into consideration and as such differs from disability (World Health Organization [WHO], 2001). Another issue relative to clinical outcome measures is the lack of knowledge regarding what the worker was capable of prior to the injury or illness; known as a baseline level of functioning (Pransky & Himmelstein, 1996). As an example, standardized grip strength testing is often used at least as part of an assessment of functioning. An injured worker may have significantly reduced grip strength when compared to others of similar age and gender but unless it is known exactly how much strength is required to complete job tasks and how much grip strength the worker had prior to the onset of work disability, then the results of such a test are not very useful in a RTW context.

It is only within the past decade that consideration of RTW outcomes within the context of a program has been evident in the research literature (Ammendolia et al., 2009; Young, Pransky, & van Mechelen, 2002). A conceptualization for RTW programs was found that appears to meet much of the criteria suggested by Schultz et al. (2007). Referred to as a developmental conceptualization of

RTW it consists of four phases; *off work, work re-integration, work maintenance* and *advancement* (Young, Roessler, et al., 2005). The first phase is initiated when work disability begins, the second phase starts with a return to the workplace and ends with working at goal status. The first two phases would make up the process (implementation) stages of the RTW life cycle illustrated in Figure 4.1. The final two phases, concerned with sustainability and progression of career path, could be seen as reflecting the success of the program with respect to longer term outcomes.

The basic purpose of RTW measurement is to reduce a complicated experience into something that can be measured and easily defined (Wasiak et al., 2007). A study to operationalize the developmental conceptualization of RTW (Wasiak et al.) identified a number of outcomes for which there were no apparent measurements. The authors found among other things that there was the lack of instrument development for measuring what they term *goal RTW status*. Working at goal status within the developmental conceptualization of RTW signifies the end of the re-entry phase (phase two). According to Wasiak et al. RTW goal status is a concept that is fundamental to RTW success. Before RTW outcomes can be measured, however, the various components need to be clearly identified in such a way as to make measurement possible. Following Wasiak et al.'s lead, once the successful RTW outcome evaluation conceptualization is finalized, operationalization of the individual concepts and the conceptualization as a whole will be undertaken.

Objectives

To clearly identify and measure the concepts of RTW outcome that will be meaningful and useful to all interested parties, a RTW program theory relative to successful outcome must be established. As of yet a program evaluation theory for RTW outcome has not been clearly identified specifically by the various stakeholders, hence the undertaking of this study. The following study was carried out to create a conceptualization of successful RTW outcome, or in terms of the developmental conceptualization of RTW, working at RTW goal status. Once the conceptualization was constructed an attempt to operationalize the concepts and conceptualization was conducted by searching existing measures.

Methods

Relative to the concept mapping methodology (Kane & Trochim, 2007) used for the overall project the study reported here represents aspects of the interpretation step as well as utilization; the final step of the methodology. The methods used in the interpretation and utilization steps included focus groups to elicit feedback on the concepts. The current study undertook a constructivist-like approach (Denzin & Lincoln, 2003) in that preliminary interpretation from the earlier study involving RTW stakeholders was combined with the researcher interpretation from this current study. Ethical approval for this study was granted by the health sciences ethical review board at the University of Western Ontario (Appendix A).

Procedure

Participant recruitment. The participants were all RTW researchers from the province of Ontario, Canada. Inclusion was based on peer-reviewed publication related to RTW and knowledge of the current RTW practices in Ontario. The researcher participants were chosen for their intimate knowledge of the RTW literature and research and as the people most often carrying out the research related to RTW interventions and outcomes. As such the researcher participants were likely to be in the best position to determine if the stakeholder generated concepts were comprehensive and for suggesting how the conceptualization could be used towards improving measurement of RTW outcomes. Invitations to participate were sent via email to researchers based on personal contacts and identified by searching websites of universities and research institutes. Utilizing the snowball effect (Patton, 1997) recipients of the email were asked to pass along the invitation to any other researchers they felt met the inclusion criteria.

Focus groups. Based on feedback from interested volunteers two dates were chosen on which to run focus groups in an attempt to acquire the maximal number of potential researchers. Two focus groups of approximately two hours with three participants each were held in locations most convenient for the researchers. Consent was obtained in writing from all participants prior to commencing the group sessions. The focus group sessions were audio taped and transcribed verbatim so that the investigator could combine and review the

results of both sessions. Notes were also made immediately following the group sessions to record impressions, ideas and thoughts relative to discussions.

In addition to the Letter of Information that participants had received when volunteering for the study a week prior to attending the focus group participants were provided with a summary document detailing the concept mapping methodology and findings from the RTW stakeholders (a summary draft of Chapter 2).

The rating results with explanations were provided to the researchers at the beginning of the focus group sessions and consisted of the figure and table results of Chapter 3 (cluster rating map, go-zone graph(s), ladder graphs of importance and perceived importance and table of average ratings of each indicator and each concept). Rather than presenting one go-zone graph with all statements, a go-zone graph for each concept was provided to increase the ease of reading and interpreting the go-zone graphs (Appendix D). The focus groups began with researchers being given an opportunity to ask questions about information contained in the provided documents and the study overall.

Interpretation. During the sessions each concept was discussed individually to start. The participants were asked to comment on and discuss whether they felt the concept name assigned to each cluster by stakeholders reflected the intended meaning based on the statements contained within the cluster. Participants were also asked to use the concept specific go-zone and pattern matching ladder graphs in their consideration. To help clarify the intended meaning of any statement, the facilitator provided background on discussions

which had taken place during the stakeholder sessions. If the information did not come about while discussing the concept name, the participants were asked how they viewed the concept in relation to program evaluation and where it fit along the continuum of process to outcome evaluation. Each of the six concepts was discussed in this manner. The participants were also asked to identify any missing concepts.

Utilization. The participants were asked to use all of the information provided and discussed to interpret the stakeholder generated cluster/concept map (Figure 3.1) and in answering the following question: “Do you think this conceptualization can be used towards improving RTW outcome measurement? And if so, how?” Participants were also asked to identify any measures that they felt evaluated any or all of the concepts. The second part of the utilization involved the operationalization of concepts and the conceptualization which occurred after the final logic model was constructed.

Construction of concepts and conceptualization. The names and definitions of the final concepts and the conceptualization are the result of combined input from stakeholders participants, the researcher participants and the study investigator, which taken together reflect both practical and research-based perspectives (Patton, 1997). The data from the researcher participants was considered by the investigator in concert with the earlier stakeholders’ interpretation (reported in Chapters 2 and 3 of this dissertation) and current RTW literature to name and define the final concepts and to transform the stakeholder generated cluster map into an outcome map. The outcome map was then used

by the investigator to develop a logic model of successful RTW outcome evaluation.

Analysis of Focus Group Data

The transcribed text from the two focus groups was first separated into sections related to each concept and the conceptualization as a whole. Each of these sections was then combined for the two groups so that text related to each concept made up one block of text. Essentially then there were seven blocks of text; one for each of the six concepts and one for the conceptualization. Sections of text that contained discussion about more than one concept or that overlapped between concepts and the conceptualization were duplicated and added to the appropriate blocks.

The results of the researcher participant groups were then combined with the results from earlier stages of the project to decide on final concept names, definitions and the conceptualization. Although the process is described in a linear fashion in actual fact it was an iterative process that occurred over many months with the investigator's decisions guided by literature evidence and input from co-investigators. Numerous versions of concept names and conceptualizations were put forth and re-analyzed against individual indicators, the rating data and comments contained in the researcher discussions before acceptance of the final results by the investigator.

Concept construction. After reading the blocks of text for each concept a number of times the investigator used content analysis to identify four categories of text data. The first category was concerned with what stage of the RTW

program the comments were concerned with (i.e. process evaluation or outcome evaluation). The second category was related to concerns or problems identified by the participants about any aspect of each of the concepts. The third category included comments and suggestions of alternate names of the concept (i.e., that differed from the stakeholder generated names). The final category included a list of measures suggested by participants that could or might be used to measure the concept. Comments and discussions were reduced to bullet items and organized by concept into a table (see Table 4.1) with the following column headings; *Evaluation Stage*, *Concerns/Discussions, Alternate Concept Names and Suggested Measures.*

In an earlier part of this project the stakeholders had rated each indicator of successful RTW outcome that made up each concept. Indicators that were rated above average by either the RTW consumer or provider participants (see Table 4.3) were used in the present study along with the data generated from the researcher participant focus groups to help identify the best concept name and to define each concept. A spreadsheet was created with four columns across the top and rows for each concept. The first column included names proposed by both stakeholder and researcher participants. The next column contained the top three rated indictors with key words or ideas highlighted. This column was followed by one that included the issues and concerns put forth by the researcher participants.

The naming and defining of the concepts followed an iterative interpretation process. In some cases a new name would be decided upon and

subsequently rejected when attempting to clearly define it or when the investigators identified potential problems. Similarly, definitions were modified during later stages when attempts to operationalize the concepts were made. To ensure that the intended meaning of the concept as generated by the stakeholders was maintained field notes taken during the brainstorming and interpretation sessions were referred to frequently and upon accepting the final name and definition of each concept.

Outcome map/conceptualization. A similar process was undertaken for the text blocks related to the conceptualization as a whole. The conceptualization text blocks were read a number of times until patterns emerged that would allow categorization by the investigator. Discussions that focused on the conceptualization as a whole were reduced to bullet items and placed in a table under the appropriate headings, which included; *concerns/potential problems, support/potential advantages* and *future directions or research*. The resulting table allowed direct comparison with the stakeholder results generated earlier in the project.

The next step in creating the final conceptualization was to combine the stakeholder generated results with the researcher participant results and transform the original cluster/concept map (see Figure 2.1) into an outcome map (Kane & Trochim, 2007). The outcome map is similar to the concept map in that all of the concepts are illustrated but the outcome map indicates other relevant data, which in this case included the stakeholders that the concept was relevant to and the relationship of the concepts to time in terms of immediate, short-term

and long-term outcomes. The outcome map underwent various refinements as concept definitions also emerged. Each concept was considered first in terms of where along the RTW program it best fit in relation to outcome evaluation. Also considered was which stakeholders the concept was focused on in terms of evaluation.

The logic model. The outcome map was then translated into a logic model of RTW Outcome Evaluation. The investigator followed basic principles for creating a program outcome logic model working along a RTW process timeline, as adapted from Young, Roessler, et al. (2005), taking into account outputs, outcomes and impacts (Kellogg Foundation, 2001).

Utilization Of The Model

The final stage of the concept mapping method involves utilization; how will the conceptualization or model be used to evaluate RTW program outcomes. During the focus groups the researchers had been invited to suggest any measures that might evaluate any or all of the concepts (Table 4.1). As suggestions were not received for every concept and given that the focus groups took place prior to finalizing each concept's definition and the overall conceptualization a further attempt at utilization was done that involved operationalizing the concepts and conceptualization.

The plan involved searching for measures of each concept separately. This search was not intended to be exhaustive for all possible tests for all concepts, rather it was a scan to determine if the concept could be measured and to determine if new measures needed to be developed. Known measures

mentioned by the researcher group (Table 4.1) were located first. Reference lists from those articles were perused for additional measures mentioned. For concepts where no measures had been suggested by the researchers a set of search terms was created based on the concept name and key words taken from the definition and top rated indicator statements that made up the concept (see Tables 4.3 and 4.4). These were combined with terms such as *outcome measure, disability evaluation, self-report, questionnaire, work,* and *occupational health*. In order to capture the biopsychosocial and transdisciplinary elements of the conceptualization databases searched included PubMed, PsycINFO and Soc INDEX.

Measures were also sought via textbooks of measurement scales, outcomes measures, evaluations and assessments. A book which proved useful for this purpose was *Health Measurement Scales: A Practical Guide to Their Development and Use* (Streiner & Norman, 2008) which led to *The Experience of Work: A Compendium and Review of 249 Measures and their Use* (Cook, Hepworth, Wall, & Warr, 1981). Streiner and Norman include an appendix that provides a list of reference books and resources for locating tests on various subjects which includes both health and work. The Cook et al. book was included in the work section and provide examples of a variety of work-related tests divided into categories.

Through a description of the test or, when available, by analyzing the actual test questions a judgment was made as to whether or not the measure was appropriate. Evidence of the measure's psychometric properties as well as

the appearance that the measure evaluated all of the concepts' key points was determined by the investigator.

Results

Participants

Six researchers ultimately were able to attend either of the group sessions. Two focus groups were conducted, each with three researchers. The first group by chance was made up of three male researchers with one each from a research institute, a university and the insurance industry. The second group also by chance was made up of all female researchers representing a research institute, a university and a compensation insurer. Specific areas of training and research focus within RTW included; program evaluation, biostatistics/methods, occupational therapy, human kinetics/kinesiology, chiropractic and psychology.

Concepts

Table 4.1 contains a summary of the combined results of the two focus group sessions related to each of the concepts individually. Essentially the concepts of *worker well-being* and *worker job satisfaction* generated the least discussion and were felt to be the most straightforward and concrete, and *human rights* and *satisfaction of stakeholders other than worker* were identified as the most complex and indeterminate by the participants. The second column of Table 4.1 identifies where along the evaluation continuum the participants placed the concept. Identified concerns and discussion points are located in the third column with alternate concept names suggested by participants in the fourth

column. The last column in Table 4.1 contains potential measures put forward by participants for evaluating the concept.

No concept was identified as missing in relation to RTW outcome although concern was expressed that aspects of some concepts might be missing. For example one of the researchers was concerned that statements contained in the concept *worker well-being* did not specifically use the term social health, while another was concerned over the apparent lack of indication of “recovery” in the concept name, despite the word appearing in two of the statements.

Conceptualization

The discussions around the conceptualization are summarized in Table 4.2. The data was coded into three main categories; concerns/problems, supports/advantages and future directions/research. The major concerns were how some aspects of the conceptualization could be measured, when measurement would occur and who would both do the measuring and be measured and the potential issues that could arise related to privacy. Also included with concerns were issues around the financial costs and expenses of the RTW program, such as time on disability benefits, costs of disability management or retraining of workers. Less discussion was focused on the advantages and uses of the conceptualization but there was general agreement that a multi-stakeholder perspective is needed, as is a way of identifying successful RTW, as defined by stakeholders. The potential for the conceptualization to also help improve RTW planning and implementation was

noted as well. Future research suggestions revolved around further refining the conceptualization, as was done as part of this study, and then trying to use the conceptualization to measure RTW outcomes to provide evidence of the utility of the conceptualization.

Defining Concepts

The final concept names and definitions can be located in Table 4.3. Most of the original stakeholder generated names were altered or changed.

Outcome Map

The outcome map is depicted in Figure 4.2. The original stakeholder generated cluster map was divided into sections by the investigator based on stage of evaluation as elicited from the stakeholder generated indicators and as identified and discussed by the researcher participants. Using Young, Roessler et al.'s (2005) developmental conceptualization of RTW as a basic framework for determining evaluation stages concepts were then placed along a continuum from RTW process (early to middle work re-integration), immediate/short-term RTW outcome (from late work re-integration to early maintenance) and sustainable RTW outcome (maintenance). The map was further divided based on the stakeholder group or groups identified as the primary evaluee of the concept.

Table 4.1 Focus group summary

Concept	Evaluation Stage	Concerns and Discussion Points	Alternate Name	Suggested Measures
Worker Performance	outcome	• Word *performance* sounds too much like a job performance evaluation done for any employee, could be misinterpreted. Statements are about how the worker is functioning at work, concept name needs to better reflect that. • In occupational rehab usually think about performance as job demands (can they sit, stand, jump up and down) versus are they performing their job. Concept will require clear definition.	Worker Job Function	• Work Limitations Questionnaire • Work Load Functioning • Productivity questionnaires
Worker Well-being	outcome	• None of the statements specifically mentioned social health. As long as intent was to encompass physical, mental and social health then concept name was good reflection. • Idea of recovery missing. Discussion that not all illness/injury entails recovery, so most felt that well-being would encompass recovery for those it related to. • Functioning was missing from concept. Discussion that health and well-being also encompassed function.	Functioning and Well-being	• Health – Related Quality of Life
Human Rights	process and outcome	• Statements not only concerned with legislated rights but with treating everyone respectfully. Idea behind the concept is felt to be fundamental to success in RTW. • Shouldn't reflect only injured worker rights so need neutral name. • Difficult to try to figure out how to measure this concept, some aspects reflect process and some could be applied to outcome.	Rights, Respect and Dignity	None offered
Satisfaction of Stakeholders other than Worker	outcome	• Not all agencies identify same parties as stakeholders. Statements are not really focused on satisfaction. More focus on the type of work being performed and how it is being performed. • Difficult to measure, not concrete.	Stakeholder Perspectives on Work and Work Performance	None offered
Worker Job Satisfaction	outcome	• Concept of satisfaction could be more of a predictor of RTW success than an outcome. Needs to be operationalized to determine if and how it can evaluate outcome.	Meaningful Work Performance	• Job Content Questionnaire • Job

		• Seems to relate to the worker's perceived intrinsic value of the job once back working		satisfaction questionnaires
Seamless RTW Process through Collaborative Communication	process	• Very important concept but not an indicator of outcome. If included in conceptualization of RTW outcome will cause confounding when trying to measure outcome.	Support and Collaboration	• Readiness to RTW

Table 4.2 Summary of conceptualization discussions

CONCERNS/POTENTIAL PROBLEMS

- might not contain enough employer perspective
- financial aspects of RTW program missing, but uncertain whether process or outcome
- issues around timing appear to be missing; some statements deal with time in terms of sustaining the return to work but not how long it took to get there. Is timing a process indicator or outcome?
- the importance of identifying which concepts relate to process evaluation and which to outcome evaluation
- the need to operationalize each of the concepts
- any resulting outcome measure will need to assess, at least in part, key stakeholders – worker, employer/supervisor, co-worker, health care professionals, and RTW funding agency (insurer, etc.)
- important to stress the conceptualization is intended for those who have been involved in a RTW program and will not capture workers who do not even attempt to RTW
- the conceptualization implies the need to assess stakeholders other than just the worker which might create new ethical considerations (privacy, confidentiality, etc.)
- Is being successful in RTW going to tell you that the other things (process/implementation) are good, making evaluation of both redundant in a way? I.e. is it possible to have very good worker performance and satisfied stakeholders if the process was poor?
- conceptualization implies a need for a mixed-method approach to the RTW outcome evaluation
- any resulting measure will have to be based on a continuum of sorts and most likely will need to be multiple measures to capture all the concepts and all the stakeholder perspectives.

SUPPORTS/POTENTIAL ADVANTAGES

- good that method involved including various stakeholders in the process of defining successful RTW
- results provide qualifiers to RTW outcome that were previously missing from administrative or nominal type scales of RTW outcome
- has the potential ability to be able to differentiate between RTW and successful RTW
- will help to inform all aspects of a program from how a specific RTW program is planned and developed to how to evaluate and implement the process and outcome

FUTURE DIRECTIONS OR RESEARCH

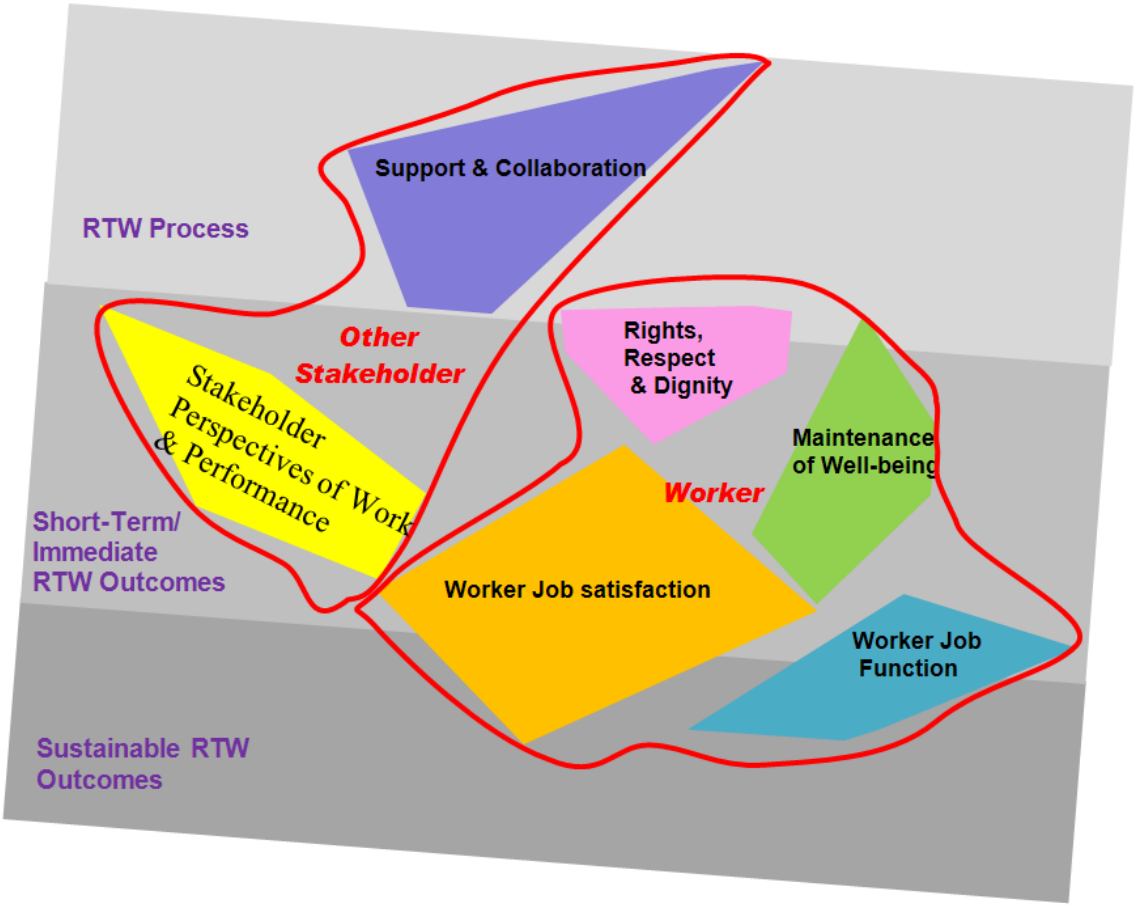
- clearly define each concept
- develop a logic model of RTW program evaluation
- when developing the outcome tool must avoid tick-box mentality, measures need to include more than just questionnaires
- develop a questionnaire and start with item development using the statements generated by the stakeholders and then administer to a large group of workers and analyze with a factor analysis
- determine if workers' and perhaps other stakeholders' perspectives change over the course of a RTW program (i.e. what is considered important to RTW outcome could be different from the beginning of the process to the end, which would subsequently affect indicators of successful RTW)
- need research, which could be based on recurrence data and may need to be diagnostic specific, to develop guidelines for how long work needs to be sustained before a worker is considered to be permanently back to work

Table 4.3 Top indicators per concept

CONCEPT *	TOP THREE RATED INDICATORS^
Worker Performance	• the worker is performing his/her assigned work at a level that is equal to what any healthy employee would be expected to do. • the worker can complete required duties without a significant increase in his/her pain or discomfort level. • the worker is earning a wage that is comparable to the pre-injury wage.
Worker Well-being	• the worker is able to maintain his/her recovery (mental health or physical injury). • the worker will have suffered NO 'secondary wounding' (e.g. neither the RTW process nor the work being performed causes a new or recurrent injury or illness including mental health issues). • the maintenance of the worker's self- worth
Human Rights	• the worker's human & charter rights are intact and respected by all return to work stakeholders. • the worker's physical and medical restrictions are respected in accordance to what the worker's own health care professionals recommended. • the worker suffers no adversity or conflict from the employer.
Satisfaction of Stakeholders	• the employer is satisfied with the work being performed by the worker. • all stakeholders feel that the worker is performing work that is productive. • all funding sources/insurers and other external stakeholders are satisfied with what the worker is doing
Worker Job Satisfaction	• the worker is satisfied with his/her work performance. • the worker is able to effectively self-manage any ongoing issues (e.g. pain, anxiety) while remaining productive in the workplace. • the worker has returned to alternative work that is meaningful to the worker
Seamless RTW Process through Collaborative Communication	• during the RTW process there was ongoing transparent, accurate and complete communication between the worker and all stakeholders. • evidence of ongoing positive, transparent communication between the worker and the workplace contact, which was initiated early by the employer. • during the RTW process a team approach was used to rehabilitate the worker back to all aspects of functioning.

*As generated by RTW stakeholders in first stages of concept mapping project.
^Indicators are statements stakeholders generated to complete the following phrase *"One thing that indicates a worker has successfully returned to work is…"*

Figure 4.2 Outcome map of RTW evaluation



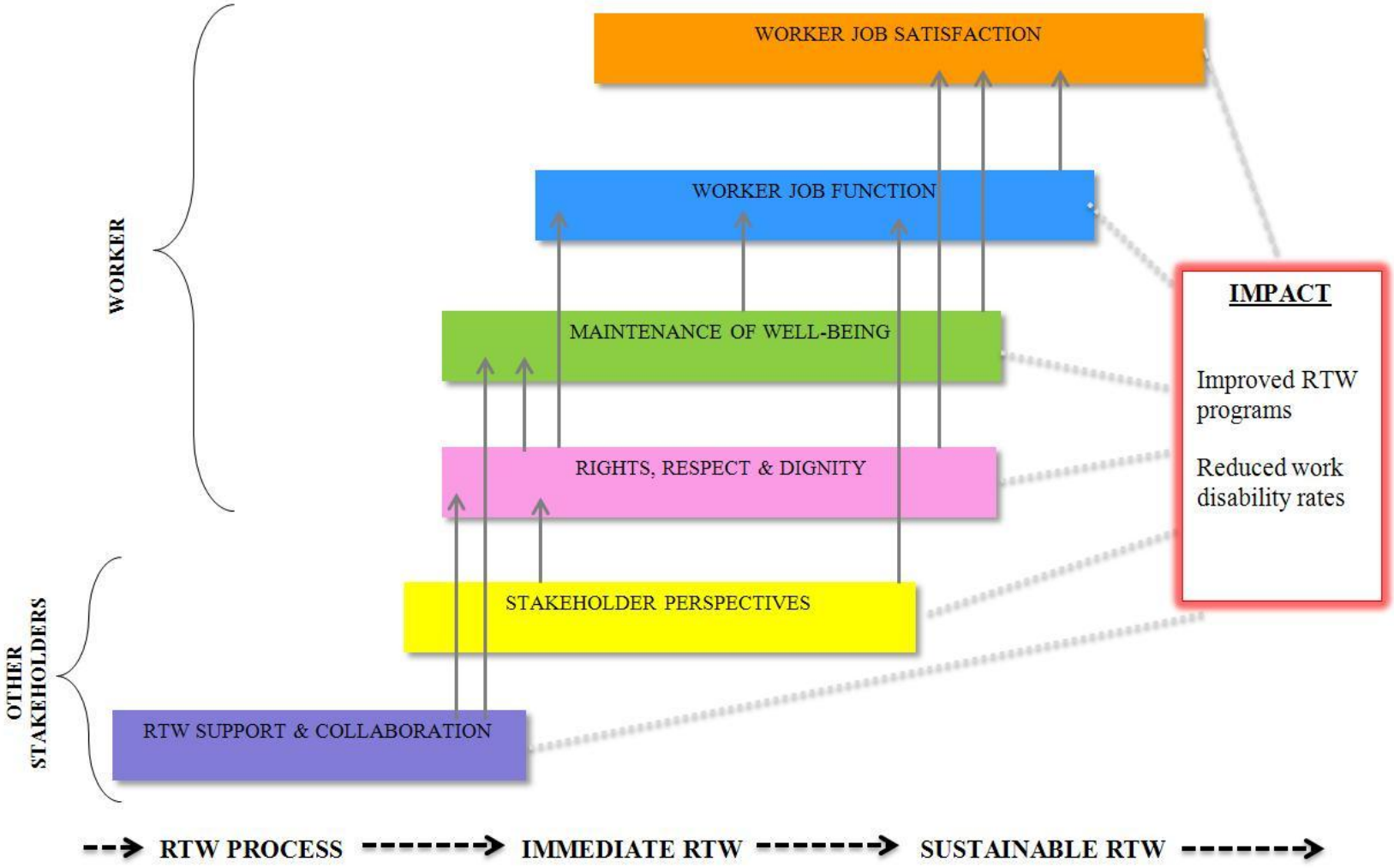
The Logic Model

The conceptualization was transformed into the Logic Model of RTW Outcome Evaluation found in Figure 4.3. A logic model is intended to be read from left to right. The continuum of RTW process and outcome is located along the bottom of the Figure, beginning with an arrow into RTW process and ending with an arrow out of sustainable RTW outcome to signify the continuum of RTW process and outcome. Each concept is represented by a coloured rectangle, which corresponds to the colour used in the outcome map. The length of the rectangle is dependent upon where along the RTW outcome continuum the concept is felt to begin and end. The logic model is not intended to identify all of

the process and implementation related concepts as the focus of this study was to conceptualize successful RTW outcome evaluation.

In Figure 4.3 each concept is linked to other concepts via gray vertical arrows. The arrows indicate which concepts are dependent or foundational for others. The unidirectional arrows do not imply a hierarchy or that only linear interaction between concepts exists. The vertical gray arrows indicate that one concept must exist as a foundation before the concept at the end of the arrow can be achieved successfully. For example, the concept of *Rights, Respect & Dignity (pink)* is necessary if the concepts of *Functioning & Well-being (green), Worker Job Function (aqua)* and *Worker Job Satisfaction (orange)* can be successfully attained. The only concept that does not form a foundation for another concept is *Worker Job Satisfaction*.

Figure 4.3 Logic model of RTW outcome evaluation



It is also important to note that the concepts closest to the left side of the model are related to the stakeholders other than the worker, then advance to concepts that are primarily concerned with just the worker as the outcome stages flow to more sustainable RTW.

Utilization of the Model

Table 4.2 contains the researchers' comments regarding the conceptualization as a whole and how it could be used. Minimal discussion was given by the researchers with respect to this question. Some of those comments included elements that were already planned and have already been attended to such as clearly defining the concepts and creating a logic model. Although more than one researcher advised against using questionnaire only evaluation to measure successful RTW outcome no specific suggestions for measures that were not questionnaires were provided. Measures were not suggested for every concept and for the ones that were named there was hesitation and concern on the part of the researchers that the named measures were not intended to measure RTW. For example the Work Limitations Questionnaire was suggested and discussed in both focus groups as a measure to evaluate work performance but with caveats that it was not intended as a RTW measure.

The general consensus from the researcher focus groups was that the model would need to be tested to confirm that all stakeholders' perspectives were sufficiently represented but that if the validity of the model could be established the most important use would be differentiating between successful

and unsuccessful RTW. The differentiation would help to establish what programs or interventions were most beneficial.

Operationalizing Concepts of Successful RTW Outcome Evaluation

The logic model is made up of six concepts; *RTW support and collaboration, stakeholder perspectives, rights respect and dignity, maintenance of well-being, worker job function* and *worker job satisfaction.* Only the last five of the listed concepts are actually successful RTW outcomes (*RTW support and collaboration* would be part of process evaluation). The purpose of the operationalization was to determine if the concepts or conceptualization could be measured with existing tools or if a need to develop new measures existed.

Measures That Map to the Concepts of Successful RTW Outcome

Not all of the measures suggested by the researchers were located or have psychometric information available. Of the measures listed in Table 4.1 relating to outcome measurement that were located all were found to map to the basic idea of the matched concept. These measures included the Work Limitations Questionnaire (Lerner, Amick, Rogers, Malspeis, Bungay, & Cynn, 2001) various health-related quality of life measures such as the SF-36 (Ware & Sherbourne, 1992), and the Job Content Questionnaire (Karasek et al., 1998). Other work satisfaction questionnaires are listed in Cook et al. (1981) and quality of life scales in general appear to map well to the concept of *maintenance of well-being*.

Cook et al. (1981) have included an array of work-related questionnaires that they group into job satisfaction, specific satisfaction, alienation and

commitment, occupational metal health and ill-health, job involvement and job motivation, work values, beliefs and needs, perceptions of the job, work role, job context and organizational climate and leadership style and perceptions of others. Many of the questions contained in the questionnaires relate very closely to job satisfaction and are difficult to differentiate into various categories. The concept that did not map to any measure was the *rights, respect and dignity* concept. Although existing measures evaluate how other stakeholders treat the worker none specifically deal with rights. For example one questionnaire *Commitment to the Formal Organization* (Franklin, 1975 in Cook et al.) has a section on willingness to uphold norms and rules which includes questions such as *most of the time the organization tries to be honest and fair in dealing with employees,* and *management is interested in the welfare of its people.* These questions come close but no mention of the rights of the worker are made explicitly. The preceding example is similar to other concepts where questions come very close to the intent but could potentially be different enough to miss the mark.

Health and well-being can be evaluated via quality of life questionnaires such as the SF-36, which is also psychometrically sound and reflects the well-being of the worker both at work and away from work (Ware & Sherbourne, 1992). Numerous job satisfaction questionnaires exist such as the Job Content Questionnaire (Karasek et al., 1998) that map to *worker job satisfaction*. The Survey of Work Values (Wollack, Goodale, Wijting, & Smith, 1971) listed in the Cook et al. (1981) book maps on to the *worker job satisfaction* as defined in the

concept mapping outcomes. The questions relate to the pride or satisfaction the worker feels about his or her own work performance but they do not relate to the worker being able to manage any health-related problems that might arise.

A review article of productivity measures identified a number of scales that could assess the concept of worker job function (Escorpizo et al., 2007). These include the *Work Limitations Questionnaire*, *Health and Work Questionnaire* and the *WHO-Health and Work Performance Questionnaire.*

Measures that might encompass the entire conceptualization were also sought to determine if the elements of time and need to evaluate stakeholders other than the worker could be captured. None of the measures already listed that evaluate concepts indicated at what point along the RTW continuum the factors would be evaluated, or if the questions contained in the measure could be administered at different times. One test that came close but still failed to meet all of the conceptualization's elements was the General Questionnaire for Psychological and Social Factors at Work - QPSNordic (Lindström et al., 2000). This questionnaire is quite extensive and has undergone psychometric testing but according to the developers of the questionnaire job satisfaction and health were intentionally omitted (Nordic Council of Ministers, 2007).

Discussion

Previously, very little attention was focused on what constitutes RTW success (Wasiak et al., 2007). The concept mapping project was undertaken to attempted to fill that gap and the study reported here signifies the culmination of the entire concept mapping project. The resulting conceptualization represents

an integration of research and practice perspectives of successful RTW outcomes and reflects innovative thinking of successful RTW outcome evaluation specific to working at goal status.

The logic model constructed as part of this study provides a means, perhaps for the first time, by which all parties involved can share a common vision of what the RTW program hopes to achieve (Kellogg Foundation, 2001). Within the logic model novel concepts were identified, while concepts previously proposed by others were confirmed (Franche, Cullen, et al., 2005; Krause, Frank, et al., 2001; Young, Roessler, et al., 2005). The most significant results relative to the logic model were the number of concepts and the relationships among the concepts.

The study reported here adds support to the developmental conceptualization of RTW (Young, Roessler, et al, 2005) by defining outcomes critical for working at goal status. The outcome *working at goal status* signifies completion of phase two and entry into phase three of the developmental conceptualization and the logic model identifies the outcomes necessary for meeting the goal of *working at goal status*. The study reported here was concerned with what stakeholders felt indicated that working at goal status and onward had been successfully achieved. While the difference between the developmental conceptualization and the successful RTW outcome evaluation conceptualization is slight, the value of this current study is to build upon the developmental conceptualization. Clearly, from the stakeholders' perspective working at goal status is not a working/not working dichotomous-type goal and

other elements are needed to identify goal attainment. Adding to the developmental conceptualization further aids our understanding RTW outcomes and assists in continuing to evolve the theoretical base of RTW programs. Identifying outcomes of interest to stakeholders paves the way for developing a shared and unambiguous objective with respect to setting goals for RTW programs.

Focus Groups

One of the most interesting pieces of the researchers' discussions was the perspective that each brought to the issue. The notion that each stakeholder of RTW has their own paradigms has been raised before (Young, Wasiak, et al., 2005) but it was interesting for this investigator to see how different each researcher's paradigm was. Each researcher's past and current experiences affected the interpretation and definition of different terms. For example, one researcher was quite insistent that co-workers could not be stakeholders since her agency only included business-type partners as stakeholders. Each researcher's specific population of study or area of research had an effect on the concerns brought forth. Some raised concerns related to the employer and the economics of RTW programs while others were concerned about workers who may not have a voice. In hindsight it was extremely beneficial to have a wide range of RTW researchers, who each identified with a different stakeholder group.

Another example of how world views shaped the interpretation of concepts by researchers related to understanding the purpose of the indicators of

successful RTW. A few of the researchers had difficulty understanding that the indicators (statements) were used as a means to develop the concept and were not being used as items for questionnaire development. This reflected their focus on questionnaire development as a research interest. The result was that a few of the researchers were insistent that the concepts did not contain all of the important aspects needed to evaluate it, because they were under the impression that the indicators in the go-zone graph for example were items for a questionnaire, and the concept definition was limited by only those items.

In terms of the name of each concept the comments were useful and logical. Most of the participants indicated either directly or indirectly the need to provide clear definitions of each concept to avoid any potential misinterpretations or misuses. Suggestions for the need to operationalizing each concept were also made. Unfortunately few suggestions were offered in terms of existing measures that would capture each concept and the ones that were suggested were often accompanied with a caveat that the researchers did not feel the measure quite evaluated what the concept was trying to capture.

The two main topics felt to be underrepresented related to the employer perspective of the whole conceptualization and financial considerations. Participants suggested that input from employer groups would help to further validate the conceptualization. A number of the researchers felt that it would be interesting to present employers with the conceptualization and find out if they felt any issues of importance were missing. Keeping in mind that this study was

concerned with RTW outcome it is difficult to predict if the employer concerns would relate more to process or outcome.

Concepts

Temporal aspects of RTW outcome evaluation. Inclusion of temporal aspects in developing RTW conceptualization has been identified as important (Schultz et al., 2007; Young, Roessler, et al., 2005). The developmental conceptualization of RTW (Young, Roessler, et al.) was used as a framework for defining the concepts of this current study. The developmental conceptualization consists of four phases of RTW; *off work, re-entry, maintenance* and *advancement.*

The focus of the study being reported here was how stakeholders would identify that a worker was working at goal status. The investigator hypothesized that this could range from the late *re-entry phase* (*initiate goal RTW status*) to the end of *advancement* phase (*attain advancement*). Although the following concepts are defined within these phases it does not imply that the concepts may not have aspects that are important to outcomes at other phases of the program, such as *off work* and *re-entry* (both considered part of RTW process).

With one exception, which will be explained in the following paragraph, the concepts of RTW outcome evaluation are not defined as part of the RTW process. Wasiak and colleagues (2007) define RTW outcomes as measurable characteristics of workers' RTW status across the four phases of the developmental conceptualization of RTW. The focus of the following concepts

was relative to any point after the worker was working at goal status. Table 4.4 contains the definition of each concept.

Support and collaboration. Meaning: Skilled and knowledgeable stakeholders (employer, health care professionals, insurer and co-workers) use a team approach to plan and implement a personalized RTW program in conjunction with the worker.

This finding is the most foundational of the concepts included in the logic model. At this stage it is necessary to provide some background to fully explain how and why the concept evolved over the course of the concept mapping project. In the early stages of the project during the stakeholder generation of indicators of successful RTW outcome, it became clear that participants had difficulty focusing solely on outcomes. Even though the indicators used to form the concept *support and collaboration* related to the successful implementation of a RTW program the investigator chose not to reject them. At the time the decision to accept process-related indicators served to build trust and appear transparent to participants. As a concept s*upport and collaboration* was ranked third out of six on importance to successful RTW outcome by stakeholders. Researcher participants in this current study agreed on the importance of the concept but expressed concern that inclusion of *support and collaboration* in an outcome measure would act as a potential confounder since the concept relates to process not outcome.

Table 4.4 Final concept names and definitions

CONCEPT	MEANING	KEY COMPONENTS
Support & Collaboration	Skilled and knowledgeable stakeholders (employer, health care professionals, insurer and co-workers) use a team approach to plan and implement a personalized RTW program in conjunction with the worker. (Note: concept is not a RTW outcome but would fall under process evaluation)	• Team approach • Transparent • Personalized • Experienced & skillful contact person • Ongoing contact/support • Education
***Stakeholder Perspectives**	Stakeholders (employer, co-workers, insurer, and health care providers) are satisfied with and not disadvantaged by the worker's job type, task demands and productivity.	• Fairness • Financial incentives/disincentives • Mental or physical hardships • Stakeholder satisfaction • Work fraud
***Rights, Respect & Dignity**	In accordance with the worker's basic human rights and functional abilities the worker is being treated fairly and respectfully by other stakeholders.	• Human and charter rights intact • Recommendations implemented in good faith • Worker's opinion/input respected • No worker stigma
***Maintenance of Well-being**	Being at work causes no worsening of the worker's well-being in terms of physical, mental or social health or interference with participation in non-work activities.	• Health status • Participation in life roles/activities • Quality of life
***Worker Job Function**	The worker is able to sustain long-term work in a permanent job in a competitive manner for competitive pay.	• Productivity • Equality of expectations • Sustainable work
***Worker Job Satisfaction**	The worker attains satisfaction, pride and self-worth from the job and workplace.	• Performance • Productivity • Meaningful • Satisfaction • Motivation • Inclusiveness

*Indicates concepts in effect once the worker is considered back at work in a full and permanent capacity (i.e. do not relate to temporary modified jobs as part of a RTW process)

Once the concept was defined within the outcome map it became even clearer that *support and collaboration* is not in fact part of outcome evaluation but was retained within the model since it acts as a starting point for a number of the outcome related concepts. Ideas contained within the concept have been identified by others as important to successful RTW programs (Ammendolia et al., 2009; Institute for Work and Health, 2007)

The decision to include the concept helped to create a comprehensive, coherent, and more concise logic model as *support and collaboration* provides a smooth transition from process to outcome evaluation. It must be emphasized that although part of the logic model and an important concept to ensuring that a worker successfully returns to work *support and collaboration* should only be measured as part of process evaluation.

Stakeholder perspectives. Meaning: Stakeholders (employer, co-workers, insurer, health care providers) are satisfied with and not disadvantaged by the worker's job type, task demands and productivity.

This is the next concept along the continuum from process to outcome. The indicators of success that made up this concept encompass issues of satisfaction in terms of costs, productivity and type of work and the effect those issues have on the stakeholders other than the worker. The idea of stakeholder perspectives relative to RTW outcomes has been identified previously (Krause, Frank, et al., 2001; Schultz et al., 2007; Young, Wasiak, et al., 2005).

Young, Wasiak et al. (2005) identified and defined various stakeholder groups, on which the stakeholders for this study were based. The only significant

difference is that the study reported on here included co-workers in the worker group. For example, *stakeholder perspectives* includes the notion that co-workers would not be expected to perform extra duties on a permanent basis when a worker with permanent limitations or restrictions is accommodated back to work. Schultz et al. (2007) included the a the model of RTW they called labour-relations but it appears to be related more to case management RTW policies than to co-worker satisfaction of the work being done by an injured worker.

The issues relevant to payers and perhaps employers likely make up the majority of RTW outcome measures currently being used; measures that have been termed administrative (Krause, Dasinger, et al., 1999), economic or forensic (Schultz et al., 2007). These would be measures such as time on disability benefits or amount paid out in benefits (Krause, Dasinger, et al.).

The health care stakeholders' perspectives in this study focused on how well recommendations were followed relative to the type of work tasks deemed appropriate and safe for the worker. Young, Wasiak, and colleagues (2005) also mentioned health care providers concerns and motivators relative to RTW outcomes but their perspective for defining what affected outcomes differed. For example, those authors were looking at what outcome would bring satisfaction to the health care provider including for example, increased referral rates based on workers who successfully returned to work. From a health care provider perspective biomedical and/or psychosocial measures would be relevant to determining if the stakeholders are satisfied with the job type, demands and productivity (Schultz et al., 2007).

Essentially then this concept is very broad and covers a wide spectrum of factors that potentially require innovative measurement. The concept was rated as the least important for all stakeholders in terms of indicating whether or not a worker had successfully returned to work.

Rights, respect and dignity. Meaning: In accordance with the worker's basic human rights and functional abilities the worker is being treated fairly and respectfully by other stakeholders.

This concept was one of the most difficult to define as it covers a wide range of issues. The stakeholders had initially named this concept *human rights* but concern was raised by the researcher participants that the name sounded "too legal" and might be misleading. The researcher participants felt that the concept should include all stakeholders, such that the worker should also be treating other stakeholders with respect and dignity. Although this is a worthy argument in general, based on the indicators that the stakeholder group used in generating the concept it was not the intended meaning.

One of the reasons for not limiting this concept to just human rights related to discussions from both types of participants. They revealed incidences of subtler mistreatment that would not have qualified as an infringement on human rights but certainly left the worker disadvantaged. A participant noted that in some cases the worker may have minor limitations that the employer can accommodate and therefore the employer cannot legally lay the worker off. The employer may then try to get the worker to leave the job by making the work environment uncomfortable. For example, a worker who is repeatedly scheduled

to work the least favourable shift or hours, or assigned tasks no one else wants. Formerly friendly co-workers have also been known to socially exclude a worker if they feel the worker has returned to less demanding work for equal pay.

The concept *rights, respect and dignity* was ranked by the RTW consumer group as the most important concept and yet as a distinct concept it has not been previously identified in the literature with respect to RTW outcomes. This concept is an example of one that extends beyond outcome evaluation. Some of the discussion from stakeholders indicated that if the worker is treated poorly by other stakeholders during the RTW process then successful RTW outcome is unlikely, which is obviously of great importance but in terms of the successful RTW outcomes it is also a key factor maintaining the worker at work.

Maintenance of well-being. Meaning: Being at work causes no worsening of the worker's well-being in terms of physical, mental or social health or interference with participation in non-work activities.

At first glance the basic notion of well-being appears straight-forward and concrete but the defining and naming of this concept went through more iterations than any other. The initial name proposed by the stakeholder participants, *worker well-being,* failed to capture the temporal aspects relative to the developmental stages of RTW. The health and well-being of the worker is important across the whole RTW program but the intent of this concept was the worker's health once work was resumed. The term maintenance was used as a qualifier of well-being to help distinguish the difference between the worker's well-being during the RTW process and once working at goal status. This term

maintenance was chosen since it appeared in two of the three highest rated of the indicators that made up the concept.

Factors relative to the health and well-being of the worker are the most commonly evaluated RTW outcome after administrative or economic factors (Krause, Frank, et al., 2001; Wasiak et al., 2007; Young, Wasiak, et al., 2005). Typically quality of life or health-related quality of life measures are used (Whitfill et al., 2010) or the Work Limitations Questionnaire (Lerner et al., 2001).

Worker job function. Meaning: The worker is able to perform the tasks of a permanent job in a competitive manner for competitive pay.

The initial name of this concept was *worker performance* but the researcher participants expressed concern that is might get confused with a standard performance evaluation that an employer would do for all employees. The *worker job function* name was chosen to highlight the relationship between the worker's function and a specific job. The concept is the most foundational in terms of identifying the RTW goal status; identified as the area of RTW outcome receiving the least amount of attention (Wasiak et al., 2007).

The *worker job function* concept may appear at first to be the most concrete of all the concepts, yet the results in all aspects of the concept mapping project failed to support the investigator's expectations about the meaning of this concept to workers. For example, during the stakeholder session that generated the indicators of successful RTW the consumer stakeholders (workers) clearly indicated that the job a worker returned to was irrelevant to RTW success provided the worker had had input into choosing the job. The need for measures

to address this issue was raised in the literature (Wasiak et al., 2007); does the worker need to return to the pre-injury job in order for RTW to be successful? Yet, in the rating study one of the highest rated indicators in this concept was “the worker is performing his/her pre-injury job” and the consumer stakeholders rated it higher than providers.

Other results of the rating of indicators were equally unreflective of the discussions stakeholders had when generating the indicators. For example, significant discussion took place during both the stakeholder and the researcher groups relative to the sustainability of work. Concern was expressed over instances where a recurrence of an injury was handled by the employer or compensation system as a new injury. Once again the consumer group rated this indicator lower than providers, the result of which was that it was not one of the top three rated indicators that were used to define this concept. Issues of work maintenance and sustainability have been raised as problematic to the use of administrative measures (Baldwin, Johnson, & Butler, 1996) yet important in reflecting more authentic measures of RTW (Leyshon & Shaw, 2008).

When coming full circle so to speak, the basis of this concept is that if the return to work outcome is successful the worker will be performing the job like any other employee.

Worker job satisfaction. Meaning: The worker attains satisfaction, pride and self-worth from the job and workplace.

The stakeholders named this concept *worker job satisfaction* and based on the comments from the researcher participants there were no compelling

reasons to change or alter the name. Job satisfaction is often measured with respect to work but not necessarily used as a measure of successful RTW outcome (Ferris, Rogers, Blass, & Hochwarter, 2009).

Conceptualization

In response to how the conceptualization could be used towards improving the measurement of RTW outcomes the following quote from a researcher participant illustrates the main focus.

> *"If you started with this notion that we wanted to have a shared view of our success of this, this return to work at the end, right?… use that as a starting basis where maybe we need to develop some shared views about what this program is and how we can change it. … You'd think it would be great to have this return to work outcome measure for those who have returned to work and we can find out more information about that, right?"*

Essentially, the purpose was that having a conceptualization for successful RTW outcome evaluation would allow distinctions to be made between those workers who may be back at work but are likely to experience disruptions in work or an inability to maintain the RTW status due to failure in one or more of the concepts. The notion that understanding what concepts make up the successful RTW outcome also provides all stakeholders a guide to what they are working towards. It is the shared view of successful RTW goal status that Wasiak and colleagues (2007) identified as missing from RTW program theory.

The developmental conceptualization of RTW (Young, Roessler, et al., 2005) was invaluable in providing a timeline framework in which to place the outcome map and final logic model. From the researcher discussions on how the concepts could be used it became more apparent how to use the cluster map to differentiate concepts concerned with process evaluation from outcome

evaluation. In the outcome map (Figure 4.2) this idea is depicted in the progressively darker gray rectangles and in the logic model (Figure 4.3) the timeline is along the bottom of the figure from left to right.

The logic model will help all stakeholders involved in RTW programs to understand what has to happen and when. The logic model also helps to clarify who takes responsibility for the various aspects and who undergoes evaluation of the concept. What is still not necessarily clear is perhaps who is responsible for initiating evaluation of each concept. Likely further research will be necessary to determine who would be responsible for administering outcome measures for each concept, as well as to whom the results of the measure would be available. The issue of confidentiality and privacy of information was wisely raised by the researcher participants. Part of the determination may be related to why the information is being collected (independent research or employer/payer program evaluation) but certainly further investigation of the issue is warranted.

What could appear to be glaring omissions from the model are the administrative and economic outcomes typically used to measure RTW. The employer or insurer/payer related economic issues would generally fall within the concept of *stakeholder perspectives*, but further investigation is necessary to determine if those issues, such as time on benefits, lost work days, amount paid out in disability benefits, are in fact outcomes or outputs.

The logic model is the key to illustrating the dependency of concepts on other concepts. With the exception of *worker job satisfaction* all other concepts form a foundation on which other concepts are dependent in order to be

successfully achieved. Similarly, without the initial actions and support of other stakeholders not only during the RTW process but in the early stages of RTW outcome attainment of other concepts by the worker are unlikely.

Operationalization

Although measures were found to map to most concepts at least in part, the concepts of *rights, respect and dignity* and *stakeholder perspectives* were difficult to capture in any one measure. The fact that existing measures might evaluate some parts of one concept and other parts of a different concept causes problems related to the timing of when concepts would be measured based on the logic model. None of the measures found in the literature indicated at what point along the RTW continuum the factors would be evaluated, or if the questions contained in the measure could be administered at different times. Also noted was terminology is used very differently particularly around the notion of job satisfaction. For example questions contained within the General Questionnaire for Psychological and Social Factors at Work - QPSNordic (Lindström et al., 2000) mapped very closely to the worker job satisfaction concept but the developers state that job satisfaction was intentionally omitted from that questionnaire.

The main issue of the operationalization is that although many measures exist that have good psychometric properties, in order to evaluate each concept contained within the successful RTW outcome evaluation logic model a large number of questionnaires would have to be administered. Given the amount of time and effort that administering multiple measures would demand, developing a

more targeted questionnaire or assessment of successful RTW outcome may be more beneficial. Clearly more work in this are needs to be done and particular attention to measuring the concept of rights respect and dignity would be called for.

Future Research

Presenting the successful RTW outcome evaluation logic model to larger numbers of the various stakeholder groups would be useful to determine basic face validity and confirming if any group can identify missing concepts or a lack of stakeholder focused concerns. For example, if has been suggested by the researcher participants that the employer's perspective is not well represented. Finding out if this is true would be beneficial before moving any further in using the logic model.

Comparisons between workers who self-identify as either successfully returned to work or not and determining if the conceptualization captures differences would also be necessary research if or once the model is deemed comprehensive and representative for all stakeholder groups. Being able to differentiate between workers who are successfully back at work versus those who are working but struggling to maintain work forms the main purpose of undertaking the concept mapping project and creating the logic model. There has been no method of differentiating these two groups previously, with the result being that many workers who are in fact work disabled do not get captured in the administrative outcomes used in the past.

Based on the operationalization exercise carried out as part of the study reported here, development of a questionnaire of successful RTW outcome using the statements contained within the go-zone graph (Figure 3.2) as items seems worth pursuing. Potentially, comparing the go-zone questionnaire to existing measures and determining which is more efficient and more effective as an outcome measurement tool should also be considered.

Conclusion

This paper represents the conclusion of a concept mapping study that aimed to generate a stakeholder driven conceptualization of successful RTW outcome specific to a Ontario, English speaking population. The results suggest that the conceptualization is comprehensive of concepts related to successful RTW. The logic model helps to move RTW evaluation a step closer to reliable and valid measurement (Portney & Watkins, 2000) by identifying not only what outcomes are important to different stakeholders but also how the various outcomes interact and at what stage of the outcome continuum each has the most impact. Although individual concepts mapped in part to some existing measures, not all concepts were captured and the conceptualization elements of time and stakeholder needing evaluation were not captured in any identified measures. The investigator recommends further testing of the model with larger groups of stakeholders to confirm all interests are represented adequately. Development of a questionnaire using the indicators of successful RTW outcome from the go-zones as items is also suggested.

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5. WHERE DOES THE LOGIC MODEL TAKE US

Summary of the Concept Mapping Project

The important and significant link between work and health and the complexity of returning a worker back to the workforce following a period of work disability are well established (Franche & Krause, 2002; Friesen, Yassi, & Cooper, 2001; Loisel, Durand, Baril, Gervais, & Falardeau, 2005; Young, 2010). Missing from current outcomes is the lack of a standard definition and valid measure of successful RTW outcome as well as information about the quality of the RTW (Dionne et al., 2005; Krause, Frank, Dasinger, Sullivan, & Sinclair, 2001; Young, Pransky, & van Mechelen, 2002). Even more specific is the lack of perspective of what each stakeholder considers an important outcome as opposed to the measures typically used which reflect predominantly the payer's outputs of interest (Baril, Clarke, Friesen, Stock, & Cole, 2003; Neira, 2010; Ståhl, Svensson, Petersson, & Ekberg, 2009; Young, Roessler, et al., 2005). The result is an inability to evaluate not only the efficiency and effectiveness of RTW interventions but also the overall cost of work disability on workers and societies. The first step towards a valid RTW outcome measure was to define what constituted a successful RTW outcome according to stakeholders (Backman, 2005). In order to define a successful RTW outcome a concept mapping project was undertaken to create a stakeholder generated conceptualization of successful RTW outcome, which was depicted in the form of a logic model.

The concept mapping method is considered one project but it constitutes a number of steps which for this RTW project were organized into three studies.

The first and most important study in defining successful RTW outcome involved RTW stakeholders completing the phrase “One thing that indicates a worker has successfully returned to work is…” Forty-eight indicators were generated and through both quantitative and qualitative analysis six concepts of successful RTW outcome were ultimately decided upon and named by the stakeholders.

In the second study the 48 indicators of successful RTW were rated by two groups of stakeholders; providers and consumers. Using a 5-point rating scale each group rated how important the indicator was to them as either a consumer or provider. The rating information identified importance rankings of indicators as well as concepts for the stakeholders as a group and for consumers and providers individually. Additionally, consumers and providers rated how important they thought each indicator was to the other stakeholder group (i.e. consumers rated how they thought providers would rate and vice versa). This information was used to identify how the groups perceived one another.

In the third study RTW researchers were presented with the stakeholder generated indicators and concepts from study one and the rating results from study two. As experts relative to the RTW literature and potential users of a definition of successful RTW outcome the researchers were invited to provide input regarding the inclusiveness of the concepts and offer comments and insight into the stakeholder generated results. In constructing the final logic model the investigator used the input from researchers in selecting the wording of concept names and definitions and in the placement of each concept along a continuum of RTW evaluation. The researchers raised issues related to the wording of some

concept names, which they felt could potentially cause misinterpretations. Based on the researchers' input and without changing the stakeholders' intended meanings, some concept names were modified. All of the information from the three studies was used by the investigator to construct the final logic model of successful RTW outcome evaluation (Figure 4.3). Based on the logic model attempts were made to operationalize the concepts, which essentially indicated that for the most part measures existed that would capture the basic idea of the concepts individually but there were no measures that would capture the relationships among the concepts or the temporal aspects of the conceptualization. Therefore it has been recommended by the investigator that a new measure of RTW outcome be developed based on the findings of the concept mapping study.

Discussion

The logic model identifies more than just specific concepts of successful RTW outcome evaluation. The most important aspect of the logic model is that it reflects the outcomes of successful RTW as determined by key stakeholders, outcomes that have not been previously identified. Occupational health, primary health care and outcome measurement development have been recommended as areas in which to include stakeholders/clients/patients/workers. This project included all the stakeholders attempting to identify and hence define successful RTW outcomes. Also included in the model are which stakeholder(s) would be evaluated relative to the concept, where along the RTW outcome continuum the concept is situated and how the concepts relate to one another. The logic model

confirms that health care and recovery play a minor role in comparison to other psychosocial factors with respect to regaining and maintaining employment following a period of work disability (Baldwin, Johnston, & Butler, 1996). The concept mapping method met the need of involving stakeholders with varying levels of knowledge and differing interests towards improving the overall health and well-being of the workforce (Neira, 2010). The general response from all participants in the concept mapping study was that this type of approach to RTW research was needed and appreciated.

As indicated in the preceding pages the results of the concept mapping study appear to fit well with recommendations for the direction that RTW research should be taking and also seem to match closely with current related RTW research. The model seems to have face validity for those involved in the development as participants and for those stakeholders, clinicians and researchers who have been exposed to it through various presentations given by the investigator. According to Wasiak et al. (2007) "RTW is not merely a state; rather it is a multi-phase process, encompassing both a series of events, transitions, and phases as well as interactions with other individuals and the environment" (p.767). The logic model appears to meet the criteria of this definition as concepts follow a continuum of RTW outcome, show relationships among various stakeholders and between the worker and the environment.

The successful RTW outcome evaluation logic model differs from other attempts to define successful RTW in that it appears to be the first representation derived directly from RTW stakeholders. Involvement of stakeholders in program

evaluation and research in general has been recommended (Baril et al., 2003; Romanow, 2002). Other attempts to define successful RTW have included comparing outcome methods used in various studies (Steenstra, Lee, de Vroome, Hogg-Johnson, & Bongers, 2010), identifying the lack of recurrent work absences (Baldwin et al., 1996) or a combination of return to the pre-injury job and minimal levels of functional impairment and sick days (Dionne et al., 2005). A body of literature also exists relative to process-related successful RTW; studies that look at how intervention leads to successful RTW but these studies have no measure of successful RTW outcome other than being at work (Ahrberg, Landstad, Bergroth, & Ekholm, 2010; Cowls & Galloway, 2009; Lysaght & Larmour-Trode, 2008).

Wasiak and colleagues (2007) in their paper on measuring RTW state,

> "…it was surprising that relatively little work has been invested in the development of instruments that can measure RTW goal status – a concept central to the evaluation of RTW success. This is likely due to the predominant belief that in order to achieve RTW success, the person has to return to the pre-injury status." (p.775)

The results of the concept mapping project acknowledged that RTW success was in some ways quite similar to but not necessarily equated with pre-injury status. More important than returning to the exact same job and employer as pre-injury was returning to a job that the worker was satisfied performing, that was within the workers abilities and where the worker felt valued.

Some of the concepts established in the concept mapping study are very similar to those described in a recent study by Young (2010). Both studies found the work that was appropriate to the worker's interest, abilities and functioning,

job satisfaction, a supportive work environment, and the need for social contacts were factors important to successful RTW outcome and as a result prevention of work disability. Outcomes of RTW such as those found in both studies focus on the worker and contribute to improving the equity and solidarity that has been missing from the medical model approach in primary health care research (Romanow, 2002).

Young (2010) noted that degree of importance placed on co-worker support had not been previously identified. What was different between the concept mapping results and Young's findings related to the role of co-worker support. Young found that maintenance of work was often dependent on co-workers assisting with heavier tasks such as lifting. However, in the concept mapping study success was indicated by co-workers not having to do extra work. The difference may be in co-workers offering help versus feeling they must do extra work but the general feeling of stakeholders in the concept mapping study was that co-workers often stigmatize workers who are not capable of doing all the essential task demands and workers tend to feel unwanted or unappreciated by co-workers and supervisors in those circumstances. Stakeholders felt that to be successfully back at work the worker should be able to perform the job in a manner similar to any employee. The stakeholders were not implying that workers needed to have full medical recovery before returning to work or in order to work but that successful RTW was dependent on the match between the job and the worker's abilities. Stakeholders also mentioned that co-workers risk injury by performing extra work the injured worker is not capable of doing.

While deliberating on how the logic model could be used towards measuring RTW outcomes a number of issues became apparent to the investigator. Essentially the conceptualization of successful RTW outcome evaluation is not about measuring RTW outcomes but identifying that a worker is working in a manner similar to any other worker. Many workers who have not experienced work disability have health problems, are dissatisfied with their jobs or treated poorly by co-workers and supervisors. These issues pose potential problems when considering how to measure when a worker is successfully back at work given the concepts that are included in the RTW outcome evaluation. As such testing of the model to differentiate between those who return to work and are able to maintain the work and even advance in their jobs versus those who do not will need to take place.

Limitations

The results of the concept mapping study appear similar to other research studies that have involved RTW stakeholders, however, the concept mapping participants were English speakers predominantly from Ontario, Canada and may not represent stakeholder views from other geographic regions. Another limitation relates to the number of participants in the concept mapping study. A range of stakeholder groups were represented but the numbers were small and may not be representative of the entire stakeholder group. For example concern was expressed by the researcher groups that the employer perspective was not well represented.

Future Research

One way to address concerns raised in the limitations section above is to conduct similar concept mapping studies in other geographic areas, both within Canada and in other countries. Differing work-related and disability support regulations and legislation could result in other concepts of successful RTW outcome being identified as important. In Ontario, work disability support can be regulated and provided from at least five different sources; work compensation, auto insurance benefits, short- or long-term insurance benefits, provincial government and federal government. Other jurisdictions have different systems of support but ideally within any geographical area it would be best to have one outcome measure to meet the needs of the worker and workplace regardless of the support system. All the different support systems were reflected in the participants included in the concept mapping study and the indicators of successful RTW did not appear to reflect specific issues related to any one program. In other words the participants' concerns were all quite similar with respect to RTW outcomes of importance. The conceptualization itself will need to be tested to determine if the concepts do in fact encompass all of the outcomes of interest and importance in determining workers who have successfully returned to work compared to those who have not. It is important to point out that the outcome model is not intended to evaluate those workers who do not RTW. The group of workers who are unsuccessfully back at work might include those who have low productivity, high absenteeism or presenteeism rates, forfeit other life activities to be able to work and so on. A worker successfully back at work is

able to maintain the work or even advance their job status without sacrificing their health and well-being. Future research needs to test the model and any resultant measures to determine if it is possible to differentiate between these two groups of workers.

Additional future research should include development of an outcome questionnaire specific to the logic model that is based on indicators of successful RTW outcome derived from the concept mapping study. Testing to determine the timing of various questions to match the concepts as well as determining who would administer the questions would need further investigation. Ideally the result would be a questionnaire or series of questionnaires that could be used in both research and program evaluation to measure the effect and effectiveness of various programs or interventions.

Lessons Learned

The idea that RTW is both a process and an outcome perhaps is the essence of the problem in defining RTW outcomes. In cases where RTW is used to evaluate the effectiveness of a particular intervention, whether it be a surgical technique or a treatment for a specific disorder, using RTW as an outcome should be discouraged. Investigators should be encouraged to specify exactly what the intervention is hoping to alter. It may be a decrease in time away from work but that should be indicated differently than RTW. For example in a study on the impact of various hand injuries investigators compared degree of mobility loss with outcomes of working at the same job, different job, different salary and not working (Chang, Wu, Lee, Guo, & Chiu, 2010) at a specific time post-surgery.

The outcomes the investigators used simply described the working situation. Specifying the exact outcome would potentially reduce confusion.

Discouraging the use of the term RTW as an outcome in general may be advised. The results of the concept mapping study indicate that factors relevant to being at work do not necessarily include what traditionally has been thought of as important. For example, resuming work with the same employer in the same job was identified as an important first consideration but was not ultimately the key to successful RTW outcome. What was found to be more of an issue was that the worker was doing a job he or she wanted to be doing, that was within the worker's skills and abilities, where the worker felt valued and welcomed, and from which the worker got a sense of pride or satisfaction. In other words a shift in the thinking regarding RTW would need to occur such that RTW is the program and the outcome of the program is for the disabled worker to be working.

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Appendix A. Ethics Approval Notice

Western

Office of Research Ethics

The University of Western Ontario
Room 4180 Support Services Building, London, ON, Canada N6A 5C1
Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca
Website: www.uwo.ca/research/ethics

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A.W. Salmoni
Review Number: 15490E **Review Level:** Expedited
Review Date: September 10, 2008

Protocol Title: Multiple stakeholders define a successful return to work through concept mapping
Department and Institution: Kinesiology, University of Western Ontario
Sponsor: DOMINION OF CANADA INSURANCE COMPANY
Ethics Approval Date: November 05, 2008 **Expiry Date:** September 30, 2009
Documents Reviewed and Approved: UWO Protocol, Letter of Information and Consent, Letter of Information and Consent (Phase 2), Advertisement (x2).

Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada/ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced study on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) all adverse and unexpected experiences or events that are both serious and unexpected;
c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the HSREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the HSREB.

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Chair of HSREB: Dr. Joseph Gilbert

Ethics Officer to Contact for Further Information			
☐ Janice Sutherland (jsutherl@uwo.ca)	☐ Elizabeth Wambolt (ewambolt@uwo.ca)	☑ Grace Kelly (grace.kelly@uwo.ca)	☐ Denise Grafton (dgrafton@uwo.ca)

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Ethics Approval Notice – Revision Number 1

Office of Research Ethics
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Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A.W. Salmoni
Review Number: 15490E **Revision Number:** 1
Review Date: August 25, 2009 **Review Level:** Expedited
Protocol Title: Multiple stakeholders define a successful return to work through concept mapping
Department and Institution: Kinesiology, University of Western Ontario
Sponsor: DOMINION OF CANADA INSURANCE COMPANY
Ethics Approval Date: September 22, 2009 **Expiry Date:** September 30, 2009
Documents Reviewed and Approved: Revised study methods, participant recruitment and eligibility of subjects. Letter of Information
Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada/ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

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Chair of HSREB: Dr. Joseph Gilbert

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Ethics Approval Notice – Revision Number 2

Office of Research Ethics
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Western

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A.W. Salmoni
Review Number: 15490E **Revision Number:** 2
Review Date: October 02, 2009 **Review Level:** Expedited
Protocol Title: Multiple stakeholders define a successful return to work through concept mapping
Department and Institution: Kinesiology, University of Western Ontario
Sponsor: DOMINION OF CANADA INSURANCE COMPANY
Ethics Approval Date: October 28, 2009 **Expiry Date:** September 30, 2010
Documents Reviewed and Approved: Revised study end date.
Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada/ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

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Appendix B. Letter of Information

Western
Health Sciences

Letter of Information

Using Multiple Stakeholders to Define a Successful Return to Work

Introduction

The purpose of this study is to gain the perspectives of various stakeholders in the return to work process on how they would define a successful return to work. You are being invited to participate in this study because you have experienced a return to work (RTW) following an injury or because you are a professional who helps people with some aspect of return to work after injury. The study will involve two phases, the first of which you are being invited to participate in. This phase of the study involves your participation in a brainstorming group, an individual sorting and rating task, and a follow-up interpretation group. The second phase to take place later will involve a completely new group of RTW stakeholders who will discuss the information from the first phase of the study, to see if they agree with your findings.

The purpose of this letter is to provide you with information so that you can decide whether or not you wish to participate. It is important that you understand why the study is being conducted and what is required of you. Please take the time to carefully read this and ask any questions if information is unclear or you come across wording you do not understand.

What does study participation entail?

Participants will be asked to first attend a group brainstorming session with anywhere from 11 to 39 other participants. The session will be held in Elborn College at the University of Western Ontario. The exact room location, time and date will depend on participant availability but will be scheduled at the most convenient time for all potential participants. The group will consist of two sub-groups referred to as RTW consumers, made up of participants representing workers, and RTW providers, representing people who assist injured workers with returning to work. Participants will be given some background information on the current state of return to work outcomes and measurement before attending the group. During the brainstorming session, participants will all work together to generate a list of ideas and statements in answer to questions regarding what a successful return to work should look like. Participants are discouraged from making negative statements about past or current situations and encouraged to focus on what their ideal situation would look like. This session will require about 2 hours.

The investigator will ask participants whether their preferred method of communication is mail or email. Based on each participant's preference, participants will be either emailed or mailed a copy of the list that was generated during the brainstorming session and asked to sort and rate the ideas according to a set procedure. Those participants who choose to use mail will receive a

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Elborn College • London, Ontario • CANADA – N6G 1H1
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package that includes a return-addressed, stamped envelope for returning the sorting and rating data to the investigator. The participants using email will receive instructions and an email address for returning their sorting and rating data. The time will vary but it is estimated to take anywhere from 30-90 minutes to complete this task. The results will be sent back to the investigators for analysis.

A follow-up group session will be scheduled once all the data is analyzed, approximately 2-3 weeks following the initial group session. This follow-up session will also take place in Elborn College at the University of Western Ontario. The researcher will contact participants by phone or email to determine the exact time and date based on participant availability and convenience. During the follow-up group participants will be asked to look at the results of the data, and assign names and labels to the findings. This session is estimated to take about 2 hours.

Both group sessions will take place at the University of Western Ontario. The exact time and location will depend on participant availability and convenience. Participants will be provided with free parking and if required taxi or bus reimbursement. Participants driving more than 50 km will be reimbursed at a rate of $0.54/km. Participants who participate in both group sessions and the sorting and rating task will be reimbursed $20.00 for their time. Refreshments will be served during the group sessions.

Are there any risks to being a participant?

There is little to no personal risk expected from your involvement with this study. Participants, particularly those from the worker group, will not suffer any impact to current or future benefits or employment. No identifying data will be shared or released by the researchers to any other group. Strategic sampling techniques will be utilized which includes screening potential participants with questions regarding employment type and location, so that participants from one group will be unknown to participants in the other group (i.e. a participant in the worker group may know others in that group but will not know anyone from the provider group and vise versa).

Participant contact information will be stored in a locked lab and a password protected computer. No personal information will be included in the results of the study, and all information will be destroyed upon completion of the study.

Who will benefit from this study?

Participant will not experience any direct benefits; however, the long-term benefit will be a more standardized and holistic definition for return to work. This standardized definition, that will include all stakeholders' perspectives, will result in improved outcome measures of RTW programs and the RTW research so that comparisons among studies and programs can be made to determine which interventions are most effective. More effective programs will benefit injured workers and their families, employers and communities at large in terms of pain and suffering, quality of life, productivity and costs.

Confidentiality and consent

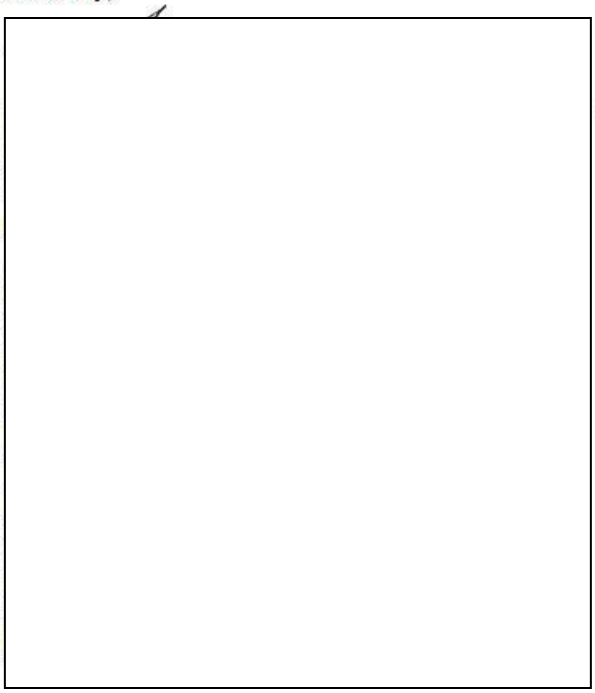
Personal information is collected for contact purposes and will not be made available to anyone outside this study. Contact information will be kept locked in the lab of Dr. Lynn Shaw in the School of Occupational Therapy at the University of Western Ontario and will be destroyed upon

completion of this study. All participants will be asked to maintain confidentiality by not revealing names of other participants, and to refrain from repeating or describing events that take place during the group. Information about employment and profession will be reported in future publications only to describe the stakeholders who participated in the study but no one will be identified by name. No generated idea or collected data will be identified by name in the study report. If the results of the study are published, participants' names will not be used. 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.

Participation in this study is entirely voluntary. Participants will be asked to sign a consent form at the beginning of the first group session and will be given this letter and a copy of the signed consent form for their records. If you agree to participate in this study, you have the right to withdraw at any time or refuse to answer any question without penalty. However, any data collected to that point, except for personal identifying data would remain in the study.

I am undertaking this study for my thesis as a doctoral student in the Rehabilitation Science Program at the University of Western Ontario. The other investigators in this study include co-supervisors Dr. Alan Salmoni and Dr. Lynn Shaw. If you have any questions about this study, please contact me, or either of my supervisors. If you have questions about your rights as a research participant or the conduct of this study you may contact the Office of Research Ethics (519) 661-3036, email ethics@uwo.ca.

Sincerely,



Appendix C. Sorting and Rating Form

USING MULTIPLE STAKEHOLDERS TO DEFINE A SUCCESSFGUL RETURN TO WORK

Instructions for Data Collection on Paper

This packet contains complete instructions and data collection forms for three key tasks:

- Task 1 – Sorting the outcomes into groups and recording your results
- Task 2 –information about your return to work history/involvement
- Task 3 - Rating the importance of each statement as it relates to what you feel a successful return should encompass/include or how it should be defined

For **Task 1 –** Sorting and Recording, you should have the following materials:

- Instructions for Task 2 - Sorting and Recording
- Cards, each containing one statement for you to sort
- Sort Recording Sheets

For **Task 2 –** return to work background, you should have the following materials:

- A brief questionnaire

For **Task 3** - Rating, you should have the following materials:

- Importance Rating Recording Sheets

Please follow the enclosed instructions very carefully; even a few small errors can significantly influence the final results.

You need to return only these items: (1) the Sort Recording Sheets (2) return to work background questionnaire, and (3) the Rating Recording Sheets. Fax or email all three forms to **Rhysa Leyshon**

Please FAX your completed responses to:
(attention: Rhysa Leyshon)
Or
Email to:

Task 1 - Instructions for Sorting

Step 1 - Sorting the Statement Cards. Enclosed in your package is a page with a numbered list of statements. Please print this list and then cut the pages(s) so that each numbered statement is separated into a single strip (card). Each card should have a statement and an ID number. ***Group the statements into stacks in a way that makes sense to you***, following these guidelines:

- Group the statements for how ***similar in meaning*** they are to one another. **Do not** group the statements according to how important they are, etc.

•There is no right or wrong way to group the statements. You will probably find that you could group the statements in several sensible ways. Pick the arrangement that feels best to you.

•You cannot put one statement into two stacks at the same time. Each statement must be put into only one stack.

•People differ on how many stacks they wind up with. We recommend no less than 5 stacks.

Do not create stacks that mix unrelated ideas, such as stacks called "Miscellaneous," "Other," or the like.

•A statement should be put alone in its own stack if you think it is unrelated to the other statements or it stands alone as a unique idea.

Step 2 - Recording the Results.
You also have in this packet a **Sort Recording Sheet** for recording the results of your groupings. On that sheet, please write the results of your sorting as described below. An example of how to record a stack of statements is shown in the first box on the Sort Recording Sheet.

- Pick up any one of your stacks of statements. It does not matter what order the stacks are recorded in.

- Quickly scan the statements in this stack, and write down a short phrase or title that describes the contents of the stack on the line provided after ***Stack Title or Main Topic*** in the first available box on the Sort Recording Sheet.

- In the space provided under the stack name, write the statement ID number of each card in that stack. Separate the numbers with commas. When you finish with the stack, put it aside so you don't mistakenly record it twice.

- Move on to your next stack and repeat the three actions above, recording the statement numbers in the next available box on the Sort Recording Sheet. Continue in this way until all your stacks have been named and recorded.

- ***Please write legibly and clearly.***

Sort Recording Sheet

NAME: _____
(for organizational purposes only)

This sheet is to be used for **Task 1, Step 2 - Recording the Results**. Specific directions for recording your sorts are included in the Instructions for Task 1 - Sorting and Recording. **Remember that you do not have to have as many groups as there are boxes on this sheet. The space is provided to allow for variability among participants in the way they group the items. The first box (Example Stack) is filled out to serve as a guide for you.**

Example Stack Title or Main Topic: **Things I see**
Record here the identifying number of each item in this stack, separating the ID numbers with commas.
1, 2, 7, 9

Stack Title or Main Topic:
_____
Record here the identifying number of each item in this stack, separating the ID numbers with commas.

Stack Title or Main Topic:
_____
Record here the identifying number of each item in this stack, separating the ID numbers with commas.

Stack Title or Main Topic:
_____
Record here the identifying number of each item in this stack, separating the ID numbers with commas.

Stack Title or Main Topic:
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Record here the identifying number of each item in this stack, separating the ID numbers with commas.

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Record here the identifying number of each item in this stack, separating the ID numbers with commas.

Stack Title or Main Topic:

Record here the identifying number of each item in this stack, separating the ID numbers with commas.

Demographic Information

Before completing the rating please answer the following questions.

1. Into which group do you fall?
   - Worker (includes family members of workers)/worker representative
   - assist with/provide some aspect of the RTW process

2. With a checkmark (√) mark the participant category that best describes your current status, if any other category applies to you mark it with an "x"

   - Injured worker
   - Worker with previous injury
   - Co-worker of a currently or previously injured worker
   - Supervisor of injured workers
   - Union representative or employee representative of injured workers
   - Family member of an injured worker
   - Disability manager/RTW coordinator
   - Occupational therapist
   - Occupational health nurse
   - Physical therapist
   - Psychologist
   - Physician (please list specialty- _____)
   - WSIB adjudicator/case manager
   - Long or short term disability insurance adjuster
   - Management representative of an employer/company (title - _____)

3. How many years have you been in the circumstances checked above? _____

4. How would you rate your knowledge of the current return to work policies in Ontario?

   - Expert
   - Good
   - Fair
   - Poor
   - Non-existent

Rating Recording Sheet

Please read instructions very carefully before proceeding – they are confusing. Contact Rhysa if you have any questions.

You are asked to rate the importance of each statement from the list that was generated from the brainstorming. If you represent a worker, rate the importance on the left side. On the right, rate how important you think the statement would be to the provider group (e.g. employer, insurer, and health care professional). If you represent a provider, rate your importance on the right side and on the left rate how important you think each statement would be to workers.

The rating for importance to the worker goes on the left side of the table. The rating for the return to work provider goes on the right side of the table. It does not matter if you are not representing a worker still rate how important you **think** the statement would be to a worker. Similarly, even if you do not provide return to work services or programs, indicate how important you **think** each statement would be to a return to work provider.

Keep in mind that we are looking for *relative* Importance; use **all** the values in the rating scale to make distinctions. Use the following scales:

Importance Rating
1 = **Relatively unimportant**
2 = **Somewhat important**
3 = **Moderately important**
4 = **Very important**
5 = **Extremely important**

Instructions for completing rating form:
Options

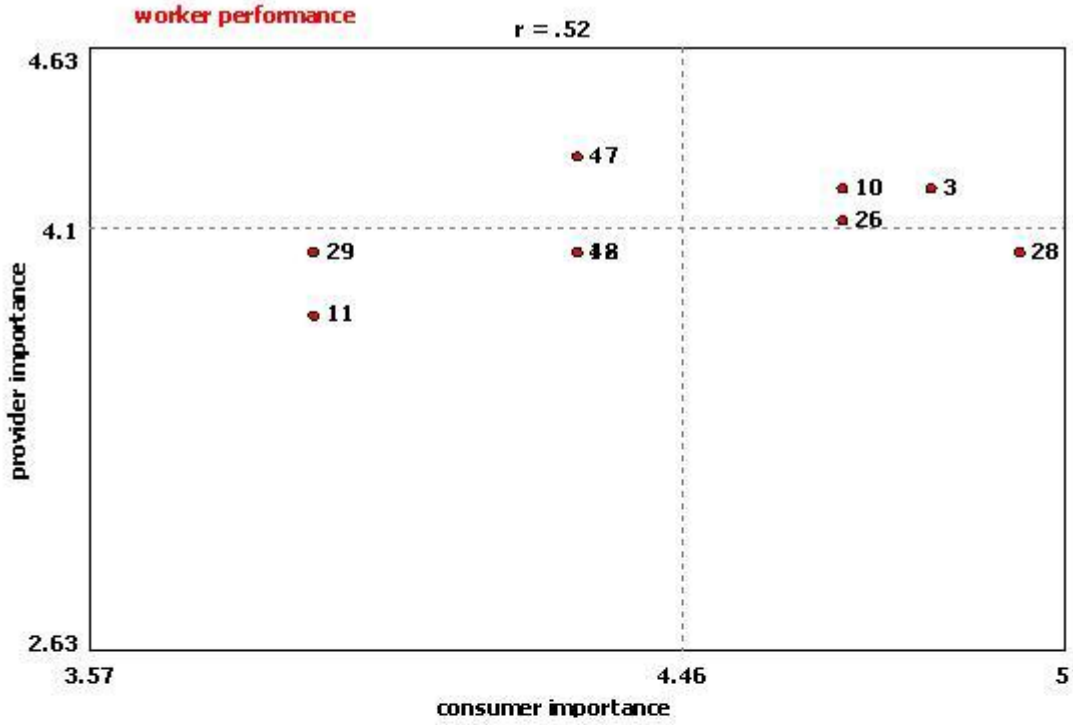
1. print forms off, circle rating for each statement and fax back to Rhysa
2. complete forms online, use underline option to indicate rating choice (click mouse on number you want to choose so it shows up black, then move mouse to underline option on toolbar and click, then move on to next statement)

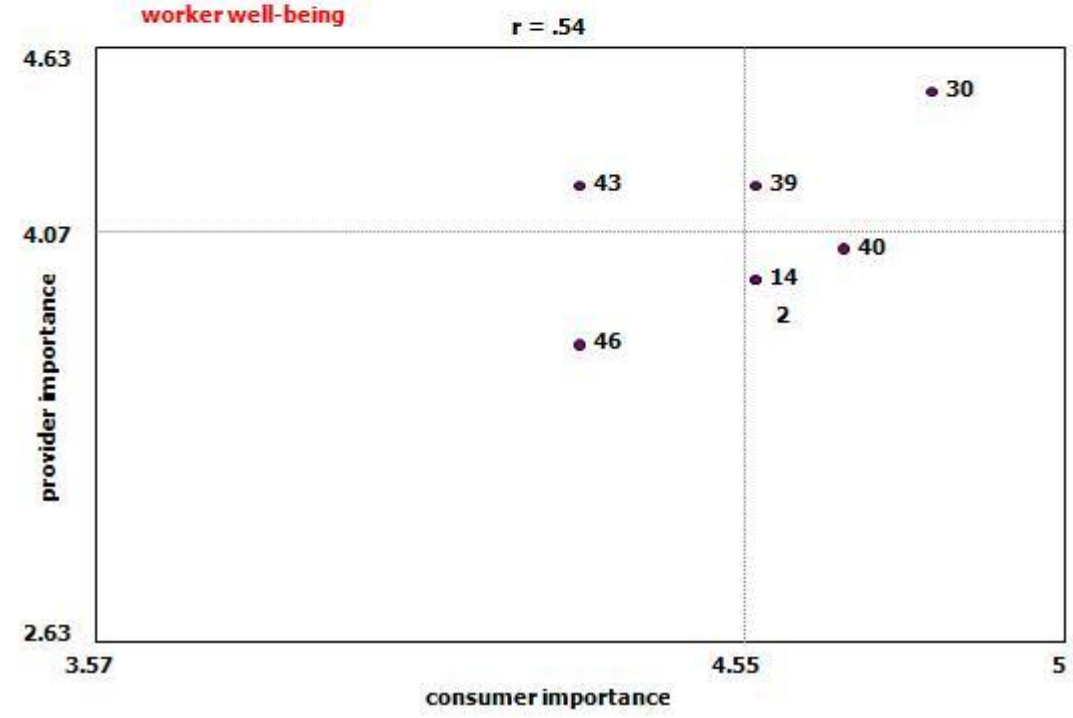
Worker Importance Rating	#	Statement	Provider Importance Rating
1 2 3 4 5	1	the worker is performing his/her pre-injury/illness job or occupation	1 2 3 4 5
1 2 3 4 5	2	the worker has returned to alternative work that is meaningful to the worker	1 2 3 4 5
1 2 3 4 5	3	the worker is performing his/her assigned work at a level that is equal to what any healthy employee would be expected to do	1 2 3 4 5
1 2 3 4 5	4	the worker is satisfied with his/her work performance	1 2 3 4 5
1 2 3 4 5	5	the employer is satisfied with the work being performed by the worker	1 2 3 4 5
1 2 3 4 5	6	the co-workers are satisfied with the work being performed by the worker	1 2 3 4 5
1 2 3 4 5	7	all health care providers are satisfied and agree with what the worker is doing	1 2 3 4 5
1 2 3 4 5	8	all funding sources/insurers and other external stakeholders are satisfied with what the worker is doing	1 2 3 4 5
1 2 3 4 5	9	all stakeholders feel that the worker is performing work that is productive	1 2 3 4 5
1 2 3 4 5	10	the worker is earning a wage that is comparable to the pre-injury wage	1 2 3 4 5
1 2 3 4 5	11	reduced insurance benefits are being paid out by the insurer	1 2 3 4 5
1 2 3 4 5	12	being able to work 85% or more of the pre-accident essential job duties	1 2 3 4 5
1 2 3 4 5	13	the worker is able to sustain the work for a period of time defined by type of injury and illness as supported by data on injury/illness recurrence rates (e.g. for low back pain worker should sustain work for 3 years, for depression 1 year, etc.	1 2 3 4 5
1 2 3 4 5	14	job satisfaction of the worker	1 2 3 4 5
1 2 3 4 5	15	the worker is not sacrificing other life roles just to be able to work	1 2 3 4 5
1 2 3 4 5	16	that the worker had a personalized RTW plan developed with input/agreement from all stakeholders, especially the worker	1 2 3 4 5
1 2 3 4 5	17	during the RTW process there was ongoing transparent communication between the worker and all stakeholders	1 2 3 4 5
1 2 3 4 5	18	during the RTW process there was ongoing accurate communication between the worker and all stakeholders	1 2 3 4 5
1 2 3 4 5	19	during the RTW process there was ongoing complete communication between the worker and all stakeholders	1 2 3 4 5
1 2 3 4 5	20	ongoing positive, transparent communication between the worker and the workplace contact	1 2 3 4 5
1 2 3 4 5	21	the worker can demonstrate the ability to identify, anticipate, and mediate potential barriers to prevent future lost-time from work	1 2 3 4 5
1 2 3 4 5	22	the worker has access to a designated, experience and skillful RTW person that the worker can contact as needed	1 2 3 4 5
1 2 3 4 5	23	the worker is able to identify rewarding job attributes and is taught to remind him/her self of why he/she enjoys coming to work each day	1 2 3 4 5

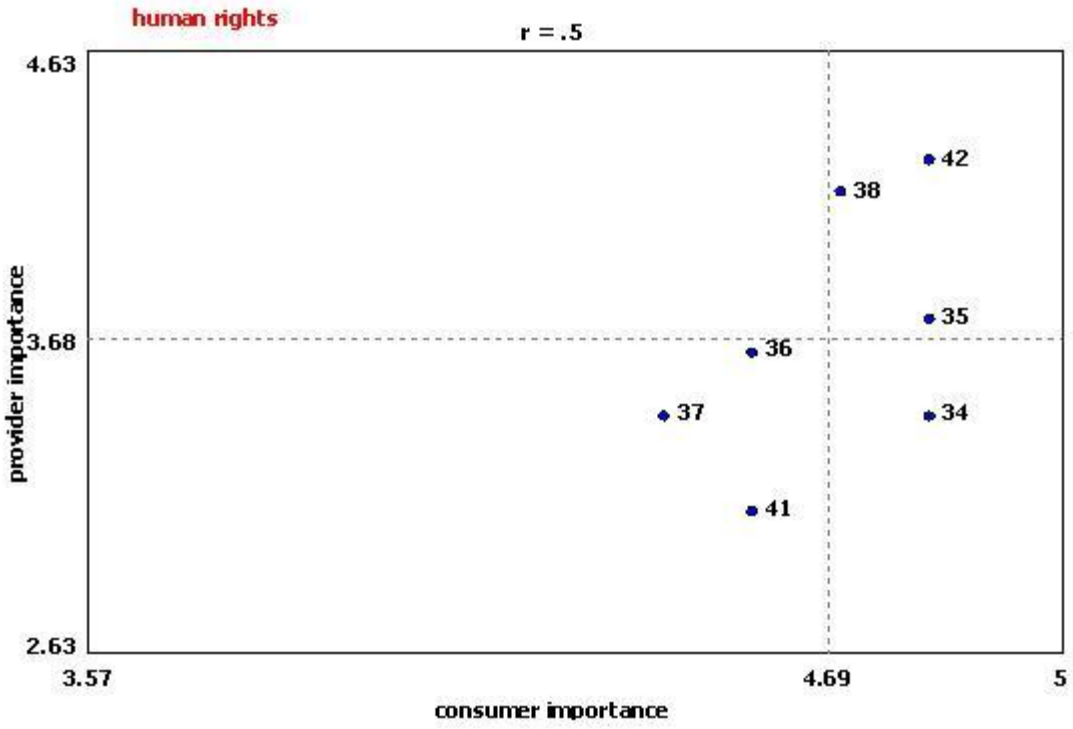
Worker Importance Rating	#	Statement	Provider Importance Rating
1 2 3 4 5	24	being able to return to function in all aspects of life important to the worker	1 2 3 4 5
1 2 3 4 5	25	all aspects of the worker's life have been assessed and treated as needed	1 2 3 4 5
1 2 3 4 5	26	the worker is able to identify who his/her advocate is	1 2 3 4 5
1 2 3 4 5	27	the worker actually wants to be working	1 2 3 4 5
1 2 3 4 5	28	during the RTW process a team approach was used to rehabilitate the worker back to all aspects of functioning	1 2 3 4 5
1 2 3 4 5	29	the worker's ability to perform the task or job he/she was injured from prior to the injury	1 2 3 4 5
1 2 3 4 5	30	colleagues are accepting and welcoming of the worker in the same way that they did prior to the injury	1 2 3 4 5
1 2 3 4 5	31	the worker can complete required duties without a significant increase in his/her pain or discomfort level	1 2 3 4 5
1 2 3 4 5	32	the ability to work entire shift without causing interference into the worker's other life roles	1 2 3 4 5
1 2 3 4 5	33	the worker is able to maintain his/her recovery (mental health or physical injury)	1 2 3 4 5
1 2 3 4 5	34	no co-workers are disadvantaged by the (temporary/ permanent modified or accommodated) work duties being completed by the worker.	1 2 3 4 5
1 2 3 4 5	35	the worker's supervisor understands and is educated regarding work disability prevention as it relates specifically to the worker’s barriers.	1 2 3 4 5
1 2 3 4 5	36	the worker is able to effectively self-manage any ongoing issues (e.g. pain, anxiety) while remaining productive in the workplace.	1 2 3 4 5
1 2 3 4 5	37	the worker's workplace injury and modified duty assignments do not cause stigma in the workplace.	1 2 3 4 5
1 2 3 4 5	38	the worker suffers no adversity or conflict from the employer.	1 2 3 4 5
1 2 3 4 5	39	the worker suffers no adversity or conflict from the insurance carrier.	1 2 3 4 5
1 2 3 4 5	40	the worker's wishes and input have been respected when training is offered as a second career (employers, insurance carriers, LMR providers & adjudicators).	1 2 3 4 5
1 2 3 4 5	41	the worker's physical and medical restrictions are respected in accordance to what the worker's own health care professionals had recommended.	1 2 3 4 5
1 2 3 4 5	42	the worker will have suffered NO 'secondary wounding'.	1 2 3 4 5
1 2 3 4 5	43	the maintenance of the worker's self worth.	1 2 3 4 5
1 2 3 4 5	44	the worker will be treated as an asset by the employer	1 2 3 4 5
1 2 3 4 5	45	the worker will be treated as an asset by the insurer.	1 2 3 4 5
1 2 3 4 5	46	the worker will be treated as an asset by third party healthcare professionals	1 2 3 4 5
1 2 3 4 5	47	the worker's human & charter rights are intact and respected by all stakeholders.	1 2 3 4 5
1 2 3 4 5	48	regardless of degree of injury/illness the worker reports and demonstrates psychological, mental and physical well-being.	1 2 3 4 5

Worker Importance Rating	#	Statement	Provider Importance Rating
1 2 3 4 5	49	regardless of degree of injury/illness the worker has on-going support to cope with any life alterations that have resulted from the worker's injury/illness	**1 2 3 4 5**
1 2 3 4 5	50	the worker is performing his/her assigned work at a level that is equal to what any healthy employee would be expected to do	**1 2 3 4 5**
1 2 3 4 5	51	the worker is satisfied with his/her work performance	**1 2 3 4 5**
1 2 3 4 5	52	the employer is satisfied with the work being performed by the worker	**1 2 3 4 5**
1 2 3 4 5	53	the worker can demonstrate an understanding of the work injury/illness system into which he/she falls	**1 2 3 4 5**

Appendix D. Go-Zones and Ladder Graphs per Concept



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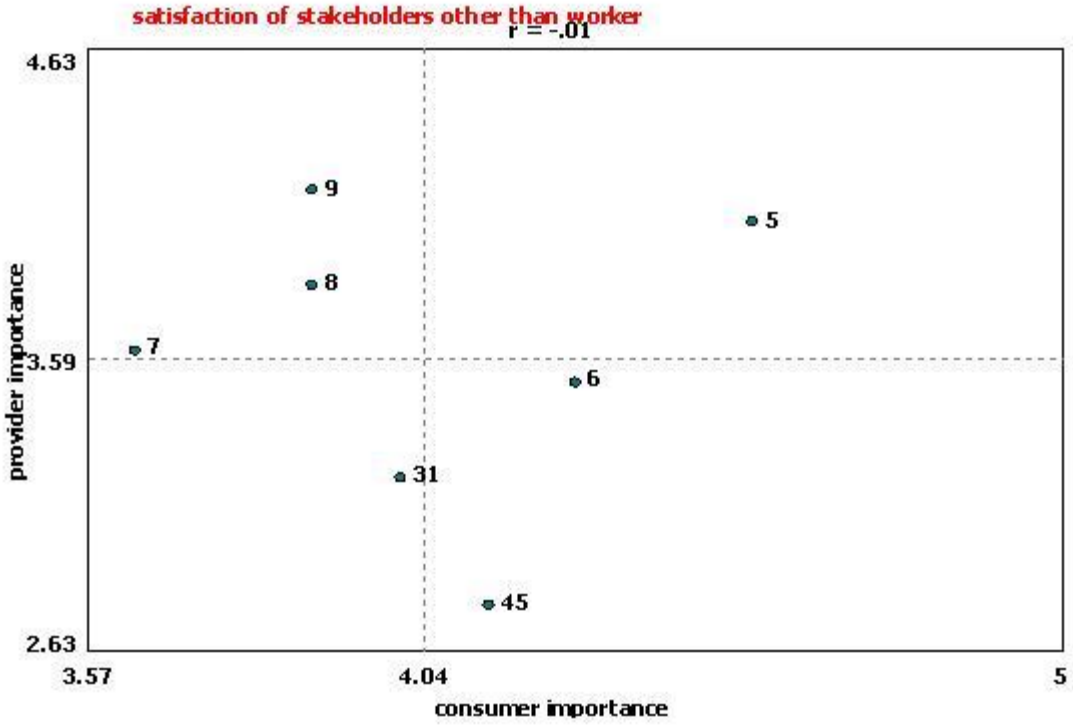
consumer importance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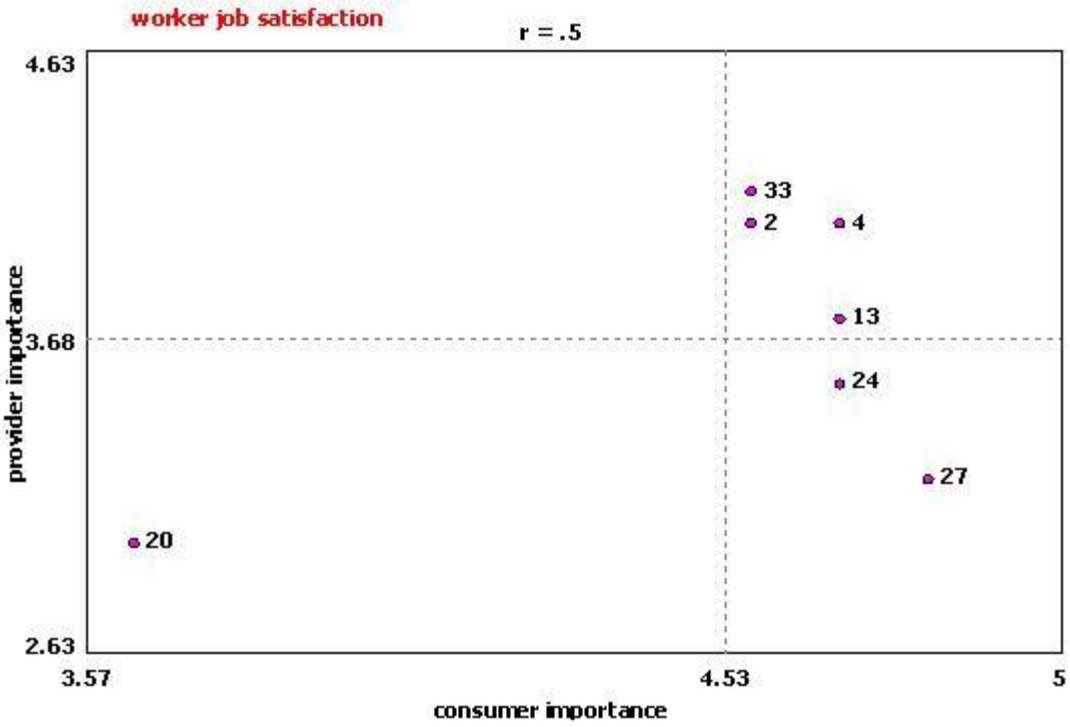
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4
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24
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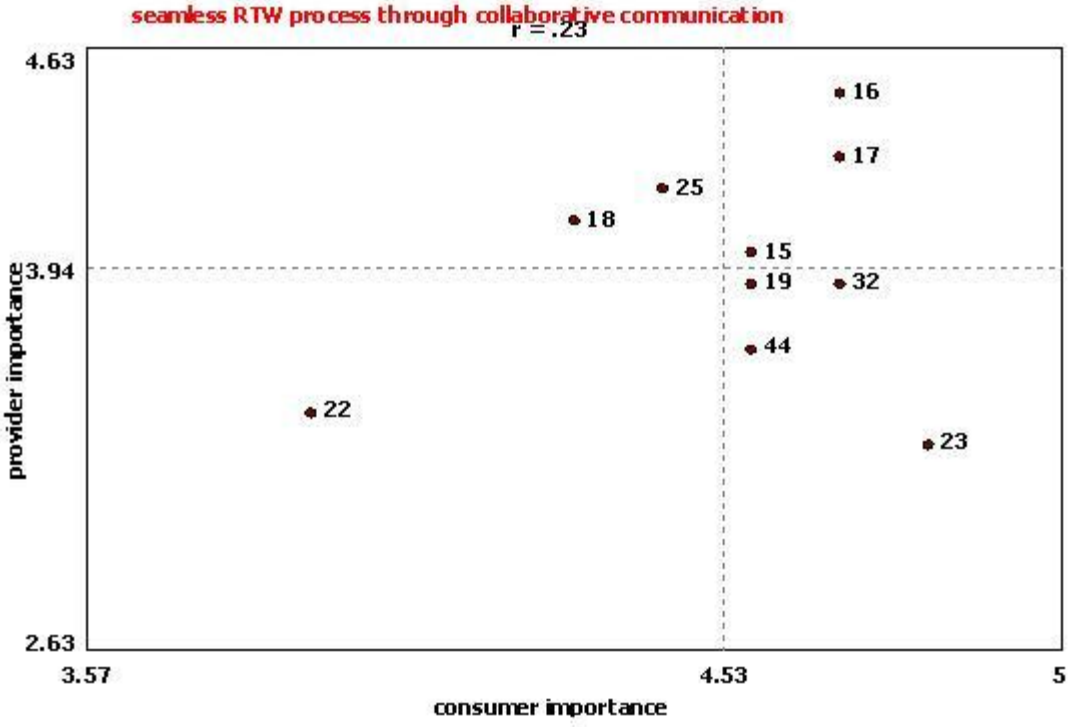
5
consumer importance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17
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19
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44
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23
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4.53
5
consumer importance

Curriculum Vitae

NAME: Rhysa Tagen Leyshon

EDUCATION:

(degrees)

2010 Doctorate of Rehabilitation Science, The University of Western Ontario.
Thesis - *A Stakeholder Generated Conceptualization for Successful Return to Work Outcome Evaluation: A Concept Mapping Approach*

1992 Master of Science in Occupational Therapy, The University of Western Ontario
Thesis – *Age Differences in Jebsen Hand Test Scores Among Elderly Women*

1988 Bachelor of Science in Occupational Therapy, University of Toronto

(training)

2010- 2013 Work Disability Prevention Program, Canadian Institute for Health Research Strategic Training Program, University of Toronto.

PUBLICATIONS:
(Published peer reviewed articles)

Leyshon, R. Chalova, K., Gerson, L., Savchenko, A., Zakrzewski, R. Howie, A. & Shaw, L. (2010). Ergonomic interventions for office workers with musculoskeletal disorders: A systematic review. *Work*, *35*, 335-348.

Leyshon, R. (2009). Coping with chronic pain: Current advances and practical information for clinicians. *Work, 33*, 369-372

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(In press)

Leyshon, R. & Shaw, L. Using multiple stakeholders to define a successful return to work: A concept mapping approach. (*Work)*

(Book chapters)

Domanski, S., Gowan, N., Leyshon, R**.** & Weller, M. (2008). Ergonomics in disability management. In K. Jacobs (ed.), Ergonomics for Therapists, 3RD edition (pp.277-312). St. Louis, MO. Elsevier Mosby.

(Non-peer reviewed)
Editor of *Narrative Reflections on Occupational Transitions*, regular column in the journal *Work,* commencing 2009 (vol. 33, # 3).

Leyshon, R. (2009). Exploring nature's lessons: Kevin's story. *Work, 33*, 373-375.
Leyshon, R. (2009). Good things happen in bad times. *Work, 33*, 129-130.
Leyshon, R. (2009). Retirement planning. *Work, 33*, 465-466.

PRESENTATIONS:
(Plenary)

Leyshon, R. Measuring what matters: Conceptualizing successful return to work through concept mapping, Institute for Work and Health, 2009

(Conference)

Leyshon, R., Chalova, K., Gerson, L., Savchenko, A., Zakrzewski, R. & Shaw, L. Ergonomic interventions for office workers with musculoskeletal disorders: A systematic review. Canadian Association of Occupational Therapists Annual Conference. Halifax May 2010

Leyshon, R**.** & Shaw, L. Using multiple stakeholders to define a successful return to work: A concept mapping approach. Canadian Association of Occupational Therapists Annual Conference. Halifax May 2010

Leyshon, R. Defining a successful RTW using concept mapping. Work Transitions in the 21st Century – Advancing Occupational Justice, invited presenter and attendee, London, ON. 2009

Miller Polgar, J., Shaw, L., Leyshon, R. & Jacobson, J. Moving on to alternative transportation: Managing mobility transitions with seniors. Canadian Association of Occupational Therapists Annual Conference, Occupational Science Symposium. Ottawa, 2009

Leyshon, R. The International Classification of Functioning, Disability and Health: A conceptual framework for ergonomics in disability prevention, doctoral student finalist presentation, Association of Canadian Ergonomists Annual Conference. Toronto, 2007

(Workshops)

Leyshon, R. Understanding functional abilities evaluations: The when, who, what, why and how's. Ontario Society of Occupational Therapists Annual Conference. Mississauga, ON 2010.

Leyshon, R., Gowan, N., Ure, D. & Mills, B. Ensuring a Successful Return to Work. Ontario Society of Occupational Therapists Annual Conference. London, ON 2005

Leyshon, R. Producing a Usable PDA. Ontario Society of Occupational Therapists Annual Conference. Toronto, 2003