WORKER PARTICIPATION AND RETURN-TO-WORK:

A study among healthcare workers in the Winnipeg Regional Health Authority

A Dissertation submitted to the Faculty of Graduate Studies
in partial fulfillment of the requirements for the degree of

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Department of Community Health Sciences
Faculty of Medicine
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DEDICATION

This paper is dedicated to my father, Henry P. Friesen, who encouraged me by word and example to question and learn, not only from books but from observation and participation in life as well. He challenged me by his questions and by his keen observation of nuances in colour, in shapes, in materials—expressing his own creativity on canvas, in wood, metal, wire and stucco, or any material at hand. He loved to discuss the meaning of life and the complexity of relationship, always giving his own personal stamp to his analyses and findings.

"Dad, the effort represented by this document is a faint reflection of the effort you put into life and into learning. Thank you."

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ABSTRACT

Problem statement

According to a work injury outcome analysis conducted by the Manitoba Labour Workplace Safety and Health Department (2001), healthcare workers experienced nearly 50% more injuries in 1999 than the provincial average, and had an average time loss per injury that exceeded the provincial average by 10 to 15 days. Although evidence for the importance of early return-to-work (RTW) for injured workers as a means of reducing the economic and social costs of workplace injury continues to mount, the application of this evidence to current policy and practice is piecemeal and the costs of work-related injury remain high.

Worker participation in the workplace has been identified as an important component of safety in the workplace, and by implication, return-to-work following injury. However, workers have reported a sense of powerlessness in the process of recovery and RTW following a workplace injury.

A theoretical multi-component RTW model was developed based on a summary of findings in the literature concerning facilitators in a successful RTW program. The worker is depicted as the central figure in this RTW model; however, the participation and commitment of the worker to the RTW process has received minimal attention in the research.

The purpose of this research was 1) to identify worker and workplace characteristics that determine worker participation in the workplace; 2) to identify worker participation and workplace characteristics that predict average duration of time-loss

injuries; and 3) to deepen our understanding of the construct of worker participation especially in the return-to-work process.

Methodology

A mixed methodology was chosen in order to gain information about the range of workers' and managers' opinions regarding worker participation and RTW through surveys, and to gain a deeper understanding, through one-on-one interviews, of the nature of workers' participation in the RTW process.

Survey participants. Two surveys were conducted: an employee survey and a manager/facility survey. Participants in the employee survey were randomly selected from union lists of employees within the Winnipeg Regional Health Authority (WRHA), while participants in the manager survey were senior administrators or managers of occupational health within WRHA healthcare facilities. Participants in the one-on-one interviews were recruited from workers within WRHA who had experienced a time-loss workplace injury within the past 24 months.

Survey design and instrumentation. The employee questionnaire was designed to elicit information about the worker, the workplace, workers' perceptions of health and safety practices, and their perceptions of the overall work environment. Questions included those from the General Perceived Self-Efficacy Scale, the Organizational Policies and Programs Questionnaire for Employees (OPP-E) and the Work Environment Scale (WES).

The manager survey consisted of questions about the workplace with regard to size, unionization, benefits, incidence and duration of time-loss injuries, costs of

insurance premiums, and questions concerning health and safety practices from the Organizational Policies and Programs Questionnaire for Managers (OPP-M).

Participants in the one-on-one interviews were asked open-ended questions about their experience of participation in the RTW process based on information they obtained, the type of input they had concerning their RTW plan, and whether they had an opportunity to exercise choice or decision-making in the RTW process.

Analysis. A profile of the employee respondents was drawn from the demographic data. Bivariate correlation analyses were used to determine significant associations with the outcome variables (i.e. worker participation variables) and to select variables for inclusion in subsequent analyses. Factor analyses were conducted in order to reduce the number of variables and to test for underlying constructs that described worker participation in the workplace. Regression analyses were completed using factor score variables in order to predict worker participation.

Variables from the manager data were analyzed for significance in a bivariate correlation and included in between-group analyses that looked for differences among the types of facilities according to average duration of time-loss injuries. Regression analyses were completed to determine whether the average duration of time-loss injuries and the cost of WCB premiums could be predicted by worker participation or workplace characteristics.

In-depth interview data from six workers who had experienced a workplace injury were categorized into themes using qualitative analysis methods.

Results

Results from the employee survey were that worker participation in the workplace was found to reflect two components: participation in structured settings such as health and safety committees, and a worker characteristic of inner motivation or commitment to the workplace and job. Increased structured participation was predicted by workplace characteristics of safety culture, people-oriented environment, type of workplace, and negatively, by managerial control. Increased workers' commitment was predicted by worker characteristics of occupation, and negatively, by their history of having a work-related injury. Commitment was also predicted by workplace characteristics of safety culture, people-oriented environment, type of workplace, and negatively, by managerial control.

From the manager survey, it was found that increased workers' participation in the workplace was predictive of a lower cost in WCB premiums, while a strong people-oriented culture was predictive of lower average duration of time-loss injuries.

Thematic analysis of the qualitative interviews suggested that workers' perception of participation in RTW was influenced by whether their input into the RTW plan was integrated into subsequent RTW plans, whether or not they felt trusted and valued as employees, and by their level of influence within the organization regarding changes to their work activities or work environment. The participants indicated that, as a result of the injury, they felt removed from the workplace, making it more difficult to communicate with the workplace system (manager, supervisor, occupational health), and with the healthcare system and the insurance system.

Discussion

Contrary to the systems model of worker participation and RTW, workers did not remain within the "more or less" safe system of the workplace with support and communication networks intact. Instead, they were expected to interact with the insurance system and the healthcare system as well as maintain communication with the workplace, essentially on their own initiative. If there were no structured (or informal) systems of cooperation or communication in place, workers feared they would fail to negotiate a return to the job.

Confirming the findings in the literature was the finding that workers' participation in the RTW process needed to be imbedded in a workplace context of respect and trust. Being able to have real choices or decision-making power with regard to the RTW plan appeared to be dependent on an injured worker's level of influence or authority within the organization, another finding that supported earlier studies on worker participation.

Conclusion and Implications for Employers and Workers

It is apparent that the workplace can facilitate workers' participation in the workplace and in RTW by addressing safety concerns, structuring RTW programs, facilitating a people-oriented work climate, and exercising respect for workers. Increased worker participation is likely to have a positive impact on reducing costs related to workplace injury.

CHAPTER ONE INTRODUCTION

1.0 The Meaning and Value of Work

Occupation, in a broad sense, refers to the engagement of human beings in activities to take care of themselves, to be productive and contributing members of society, and to enjoy themselves (Townsend et al., 1997). Positive health and well-being are fundamentally linked to meaningful occupation that serves to meet needs based on biological drives such as shelter and food, needs that prompted the development and use of capacities such as energy and creativity, and needs that rewarded the use of capacities such as meaning and satisfaction (Wilcock, 1998; Townsend et al., 1997). Meaningful occupation in our society is most often associated with paid work ensuring provision for survival needs, social needs, as well as the need to have a purpose or meaning in life (Terkel, 1972). Borgen and Amundson (1984), in a qualitative study of unemployed Canadian workers, hypothesized three key human values or needs which were met by being engaged in work or having a job. These were: the need for community – having a job meant that a person had people with whom to communicate and interact; the need for structure, which served to give a framework for days, weeks, seasons and years; and the need to have a sense of meaning or purpose. Being employed contributed to having a sense of identity and of contributing to society. Being unemployed, therefore, was found to result in losses related to these three areas: community, structure and meaning.

1.1 Work and Health

Work-related determinants of health are as basic as the economic need to provide for one's survival needs of food and shelter (Wisman, 1991) or as complex as the need to bring meaning and fulfillment to one's life (Borgen & Amundson, 1984). Health Canada

articulated the importance of employment and working conditions as a determinant of health in the document *Toward a healthy future: Second report on the health of Canadians* (Health Canada, 1999). Kemp and Kleinplatz (1985) stated that work fills societal and individual needs for economic security, providing opportunity for intellectual or physical challenge, friendships and life satisfaction. They claimed that the ability to work developed as an outcome or congruence of physical, psychological, and socioeconomic health. Karasek, Baker, Marxer, Ahlbom & Theorell, (1981) and Karasak and Theorell (1990) studied Swedish workers in a variety of occupations and demonstrated that workers' health could be at risk as a result of an imbalance in the relationship between their level of control or decision latitude about their jobs and the demands of the job. Lavis (1998) suggested that contextual factors of labour-market experiences such as unemployment or job availability might have an impact on workers' health and needed to be researched to obtain a more complete picture of employment, unemployment and health.

1.2 The Consequences of Loss of Work

The loss of employment (even temporarily) creates financial stress for workers and their families and becomes an additional stressor on the worker's health (Health Canada, 1999).

Borgen and Amundson (1984) found that the loss of one's job had wide-ranging effects on individual workers and their families in disruption of social and community relationships, experience of a loss of structure as well as a loss of meaning. They examined the emotional "roller coaster" experience of workers following job loss and found that the experience was similar to the stages of loss experienced in a grief process

expressed by feelings of anger, depression, loss of self-esteem, and hopelessness. In addition, workers experienced an extensive period of emotional highs and lows during the job search period. People who experienced a job loss as a result of a work-related injury also experienced a similar roller-coaster experience of emotional highs and lows (Borgen, Amundson & Biela, 1987; Friesen, 1989). Trief and Donelson (1995) found that injured workers experienced losses related to their disappointed expectations of prompt treatment and financial protection. These could be described as "additive losses", i.e. workers were not only affected by the loss of a job but also by injury-related losses. Ptasznik (2002), in a qualitative study of nurses with back injury found that they experienced a sense of betrayal in that they were given what they felt was inadequate help and support to return to their previous jobs. Other losses experienced by injured workers included a sense of vulnerability to life-long disability (Tarasuk & Eakin, 1994), and feeling a need to prove their disability status (Trief & Donelson, 1995).

2.0 Workplace Injury

2.1 The Economic Costs

Return-to-work (RTW) following soft tissue injuries such as low back pain and repetitive strain injuries has become a critical issue for employers as well as for insurers due to the high costs associated with disability resulting from these injuries (Campolieti & Lavis, 1998; Frank et al., 1996; Hunsley, 1997; King, 1993). In 1998, the Workers' Compensation Boards in Canada accepted 375,360 time-loss injury claims and paid $3.6 billion in benefits to workers (Association of Workers' Compensation Boards of Canada (AWCBC), 2002). Time-loss injuries (i.e. those resulting in time away from the job) in 2000 increased by 12.4% over the previous year with $132.9 million paid out in claim

benefits (AWCB, 2002). Based on annual reports by the Workers' Compensation Board of Manitoba (WCB Manitoba) (WCB Manitoba, 1999-a, 2000, 2001, 2002), more than 50% of the accepted claims were likely to be soft-tissue musculoskeletal injuries. Soft tissue injuries have been the most common cause of workers' disability and compensation claims in North America, accounting for 50% or greater of all lost-time claims in the past 15 to 20 years (AWCBC, 1999; Tate, Habeck & Galvin, 1986). The 1998-2001 reports of the WCB of Manitoba reported totals of approximately 40,000 injury claims per year with an average time-loss of approximately 15 days. Direct costs attributed to soft tissue injuries in 1998 were approximately $75 million; indirect costs to the workplace were estimated to be triple this amount (WCB Manitoba, 1999-a).

2.2 Healthcare Workers at High Risk

Occupational back injuries among healthcare workers, especially among those who were involved in lifting and transferring patients, accounted for a high percentage of the workers' compensation costs in healthcare facilities (Pheasant & Stubbs, 1992; Yassi, Khokhar, Tate, Cooper, Snow & Vallentyne, 1995-a). According to a work injury outcome analysis conducted by the Manitoba Labour Workplace Safety and Health department (MB-WSH) (2001), healthcare workers experienced nearly 50% more injuries in 1999 than the provincial average, as well as an average time loss per injury that exceeded the provincial average by 10 to 15 days.

In addition to being at risk for injury due to patient handling tasks, healthcare personnel were also vulnerable to injury by patient violence (MB-WSH, 2001; Yassi & McLean, 2001). The MB-WSH department reported 110 assaults on healthcare personnel in 2000 compared to law enforcement personnel who experienced 31 assaults within the

same time period.

2.3 Socio-Cultural Costs

Less tangible (in terms of actual dollars) are costs of a personal and social nature such as loss of self-esteem or the impact of changed abilities on a worker's community and family responsibilities and roles as a result of job loss. As reported above, loss of a job due to a workplace injury was found to have similar effects as being unemployed for other reasons, including a loss of structure, loss of social relationships, and loss of purpose or meaning (Borgen & Amundson, 1984; Friesen, 1989). The experience of a work-related injury had the additional complications of proving legitimacy of injury (Tarasuk & Eakin, 1993; Trief & Donelson, 1995), engendering fear of re-injury (Tarasuk & Eakin, 1994), or a feeling of being controlled by the insurance and/or healthcare and/or workplace systems (Friesen, Yassi & Cooper, 2001). Lavis (1998) suggested that a number of labour-market experiences, besides unemployment, could also have a negative influence on the health of workers. These included "underwork" exemplified by a "discouraged" or underemployed worker, job or employment insecurity, involuntary part-time employment or self-employment, employment in an undesirable job, or "over-employment" and an overworked employee.

Trief and Donelson (1995) conducted an analysis of the effects of the workers' compensation system on injured workers and found that workers' health-related quality of life was negatively affected because two core expectations of injured workers were frequently violated: that of receiving timely treatment for their injury, and the expectation that they would be financially protected. Ptasznik (2002), in a qualitative study of nurses' experience following a work-related back injury, found that the nurses experienced an

overwhelming set of difficulties in trying to return to their jobs. The nurses apparently felt as though they were expendable and their positions or jobs were given to someone else before they had completed or even been offered assistance with return-to-work (RTW). Tarasuk and Eakin (1994) in a qualitative study of back-injured workers found that workers perceived that their injuries had left them feeling vulnerable to life-long back problems. Workers also indicated that an effect of being off work due to a back injury (an invisible injury to other people) was the feeling that their injury was not legitimate and they were "faking it" in order to get out of work. Trief and Donelson (1995) reported a finding that workers on compensation felt a need to "prove" their disabled status since, if they reported any improvement, their benefits would be terminated and they would be expected to return to their jobs even though they had not completely recovered their physical and functional abilities.

3.0 Return-to-work

3.1 Positive and Negative Factors in Return-to-work

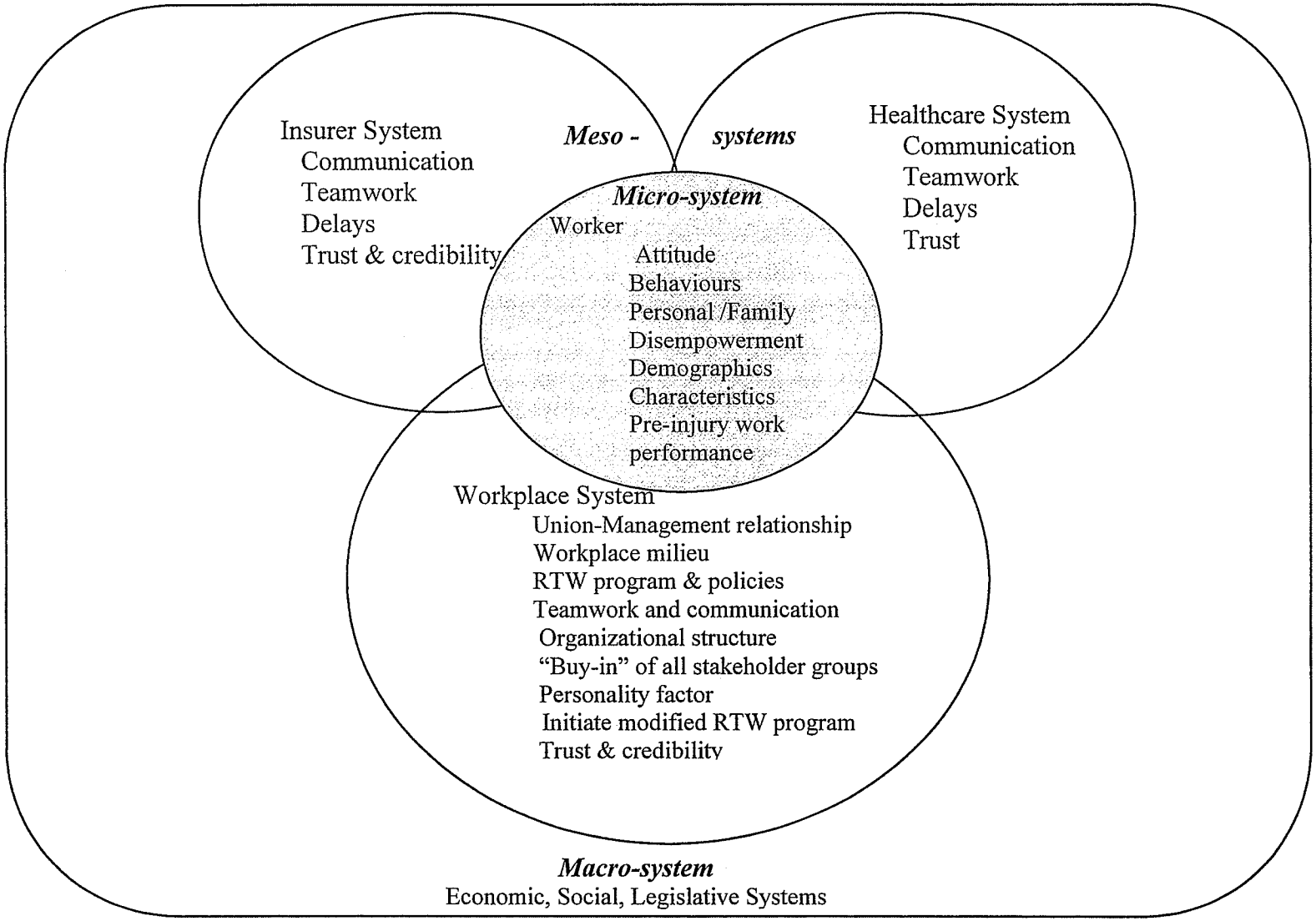
Since the 1980's clinicians and researchers have stressed that relying on physical measures or interventions alone (i.e. exercise, surgery) to facilitate RTW for injured workers has been inadequate (Frymoyer, 1991). Psychosocial and workplace factors that have been identified as predictors, either positive or negative, for RTW include depression (Ash & Goldstein, 1991), perception of higher levels of pain, job stress and work pressure, support of the supervisor, (Feuerstein & Thebarge, 1991), depression and anxiety (Feyer, Williamson, Mandryk, DeSilva, & Healy, 1992). Melnik (1990) asserted that participation of all stakeholders—management, supervisors, and employees—was essential to gain success in the RTW and injury prevention programs. Sinclair, Sullivan,

Clarke and Frank (1995) reviewed the research literature and the current status of RTW in Canada and concluded that multiple factors and multiple systems were involved in designing and trying to implement RTW programs. Sinclair, Hogg-Johnson, Mondloch and Shields, (1995) recommended a framework for RTW that included the interaction of four major sets of factors necessary to achieve a positive RTW outcome and stated that each of these four sets of factors were in themselves multi-dimensional. The factors included: health and rehabilitation services, social policy including compensation legislation and policies, the workplace and work factors, and the worker's characteristics. Frank et al. (1998) discussed the difficulty of transferring the research-based knowledge about work injury and RTW into actual practice, suggesting that if only all the stakeholders could cooperate and communicate, employers and workers might experience greater success in RTW practices.

A recent three-province qualitative study by Clarke, Cole and Ferrier (2000), Friesen et al., (2001), and Stock, Deguire, Baril and Durand (1999) found that factors viewed as either barriers or facilitators in the RTW process fell into four major categories: worker-centred, workplace-centred, centred in the insurance or healthcare systems, or part of the overall socio-economic-legislative environment. The concepts put forward by these studies are summarized in the model presented in Figure 1, which depicts the inter-relatedness of the worker (micro-system) with the meso-systems of the workplace, healthcare services, and insurance systems, all functioning within the macro-system of the economic, social and legislative systems (Friesen et al., 2001). Although there were many variables identified as either barriers or facilitators to RTW, one of the apparent factors that was alluded to but did not appear to be directly addressed was the

worker's participation in the process of RTW planning. It appeared that other stakeholders were willing to assign a role and expected behaviours for the workers whereas workers felt as though they were dis-empowered by the entire process of RTW and unable to exert any control or choices in working with the various healthcare, insurance and workplace systems (Friesen et al., 2001).

Figure 1 Barriers and Facilitators in Return-to-work (Friesen et al., 2001)



3.2 Benefits of Return-to-work

Clearly, both employer and worker experience economic benefits if injured workers are returned to their jobs as soon as possible. Shrey (1996) found that insurance and disability costs were reduced, and workers were assured of regular income; moreover, there was less disruption to work flow and employers avoided hiring temporary or casual labour. Workers benefited by ensuring they maintained their work skills and their relationships with supervisors and co-workers (Krause, Dasinger & Neuhauser, 1998).

4.0 Worker Participation

4.1 Worker Participation in the Workplace

Workers' participation in the workplace has long been perceived to be indicative of a democratic workplace; a democratic workplace has been regarded as one that encourages both production and workers' well-being (Cormier, 1997; Rooney, 1988; Tomer, 1988). Worker participation is described in terms of involvement in joint management and labour committees such as the joint health and safety committee, and in terms of a "participative management style" (Habeck, Leahy, Hunt, Chan & Welch, 1991 Shannon, et al., 1996). The latter term is used to describe workers' involvement in a range (continuum) from being recipients of information given by management to workers to having direct involvement in decision-making that concerns policies and future directions for the organization (Bernstein, 1976; Cormier, 1997; Rooney, 1992). In a study of organizational factors important for reducing workplace injury, worker participation in the workplace was found to be one of the factors involved in reducing the cost of workplace injury (Shannon et al., 1996; Shannon, Mayr & Haines, 1997). Sinclair,

Hogg-Johnson et al. (1995), following analysis of an early intervention program in RTW, concluded that failure to improve the rate of RTW was partially the result of a "failed social transaction" involving the worker and the workplace.

4.2 Worker Participation in Return-to-work

Baril and Berthelette (2000) found that RTW programs in four regions within the provincial occupational and health jurisdictions in Quebec were more successful in businesses that had formal structures such as a bipartite (union and management) health and safety committee that provided opportunity for workers' input into health and safety and RTW, than in businesses that had no formal structures for worker involvement. The National Institute of Disability Management and Research (NIDMAR) has embraced the concept of worker participation in all RTW activities in their statements of ethics and practice (NIDMAR, 2004). In a qualitative study of injured workers' perceptions of the barriers and facilitators to RTW, Friesen et al. (2001) found that worker involvement in and commitment to the process of rehabilitation and RTW following workplace injury appeared to have a role in the success of the worker's return to the job. However, the type of participation described in RTW programs was sometimes more indicative of a person's compliance to a particular RTW process rather than an indication of true choice and decision-making power (Frankcom, 1992; Mitchell, Brodwin & Benoit, 1990; Trief & Donelson, 1995; Walker, 1992).

The previously cited studies are suggestive of an association between worker participation in the workplace and worker participation in RTW. However, further understanding is needed of how workers perceive their current participation in the workplace, how they participate in the process of RTW and whether there is any

relationship between participation in the workplace and participation in RTW.

5.0 The Winnipeg Regional Health Authority

The Winnipeg Regional Health Authority (WRHA) in Manitoba was established in 2000 as one of twelve regional health authorities in the province that provide a wide range of healthcare services from acute and emergency care to long-term and community care (WRHA, 2003). The WRHA employs 27,000 workers and delivers services in 200 health sites and programs including hospitals, community health facilities, home care, personal care homes, and long-term care facilities (WRHA Interactions, April/May 2000). One of the human resource issues identified in the WRHA at the time it was established was the need to integrate occupational health services among all facilities within the authority (WRHA, 2003).

Disability management or RTW programs are offered in only a few facilities within the WRHA and, despite the establishment of these programs, costs of work-related injuries remain high (MB-WSH, 2001). In order to address the high costs, an initiative recently undertaken by the WRHA was a needs study to identify occupational health priorities for all the facilities and workers within the WRHA and to develop policy and program guidelines for musculoskeletal workplace injury prevention and RTW (Cousins, 2002). The WRHA welcomed the opportunity to participate in a research study concerning RTW and worker participation since they were already in the process of reviewing and developing best practice guidelines for an injury prevention and RTW program.

Workplace injuries that result in time lost from work are costly for employers, workers and insurance companies (WCB Manitoba, 1999-a). Healthcare workers are at

higher risk than workers in most other industries (MB-WSH, 2001), and RTW programs within the WRHA are few in number. Although RTW programs appear to be somewhat successful in reducing injury costs, RTW is a complex process involving multiple systems. Although workers' participation in the RTW process has received some attention in the literature and practice of disability management (NIDMAR, 2004), the nature and the determinants of workers' participation is not known. The current efforts of WRHA to promote injury prevention and RTW are an opportunity to study the role of worker participation in the workplace and in the process of RTW.

6.0 The Research Questions

The writer sought to answer questions about workers' participation or sense of involvement in the workplace, what characteristics were present in a workplace that encouraged workers' involvement, and whether workers' participation in the workplace had any bearing on the overall costs of workplace injury or duration of time-loss injuries. The writer also sought to explore and understand the nature of worker participation in RTW. Specifically, the following questions were raised:

- Do workers participate in the workplace, and if so, in what ways do they participate?
- What workplace characteristics would encourage workers' participation?
- Is workers' participation in the workplace related to the costs or duration of time-loss injuries?
- Do injured workers participate in the RTW process, and if so, how do they participate?

These questions will be explored for their importance in Chapter Two.

CHAPTER TWO LITERATURE REVIEW

1.0 Workplace Culture, Return-to-work, and Worker Participation

1.1 Definitions of Occupation and Health

The term "occupation", as defined in the context of this study, is used to refer to paid work or a job rather than all of a person's engagement in life's activities as defined by Townsend et al. (1997). The term "workplace" is used to refer to the organization and setting in which a person is employed and may be described in terms of physical space, workplace culture, and organizational context. Health, as defined by the World Health Organization (1948), "is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". A healthy worker is one who is able to perform all the essential aspects of his or her job and participate in all job-related activities within the workplace. As used in this study, injured workers who were able to return to their jobs were assumed to be healthy, whether or not they experienced some ongoing physical or mental challenges as a result of their injury.

1.2 Definition of Workplace Culture

Workplace (organizational) culture may be defined as a system of shared values that produce the social "glue" that holds an organization together (Smirchich, 1983). Culture expresses the values and beliefs that organization members come to share, and is expressed through story, myth, rituals and specialized language (Smirchich, 1983). Krefting and Krefting (1991) suggested that common elements in definitions of culture were that culture was learned and shared by members of a group rather than being individualistic, and it included the concept of providing mechanisms for interacting with others and with the environment. Weiner and Vardi (1990) proposed that organizational

culture acted to produce members' commitment: the stronger the culture, the stronger the commitment to the organization. They pointed to corporate cultures as real-life examples of this theory and suggested that management chose to deliberately foster certain values within their workplace in order to obtain commitment of employees to the employer. For example, the literature speaks of workplaces that have a "positive safety culture" as those that place a high value on creating a safe work environment and safe work practices for all employees, are diligent and prompt to solve safety problems and to train staff in safety procedures (MB-WSH & WCB Manitoba, 1996; Habeck et al., 1991).

1.2.1 The workplace setting

In work injury and RTW studies, some researchers focused on businesses within a particular geographic area and/or employers within a particular segment of the industry. This was partially for convenience of sampling populations but also suggested that workers within a particular type of industry might experience common work-related concerns and values (Koehoorn, 1999). For example, Koehoorn (1999), in her study on work injury among healthcare workers, focused on one large health institution although workers from a wide range of occupational groups were included in the study. Norman et al. (1998) in their study on autoworkers focused on two large plants in Ontario. Shannon et al. (1996) studied workplace organizational factors in RTW and limited their study to workplaces that had more than 50 employees, were involved in one of six areas of manufacturing, and were located in Ontario.

Foster-Fishman and Keys (1997) examined organizational culture based on the premise that, in order for an employee to feel empowered (i.e. have a sense of control and involvement), workplace cultural conditions needed to address issues of power, control,

inclusion, and trust within the organization as well as addressing these attitudes and behaviours within the individual employee. The authors suggested that organizational practices needed to have the ability and flexibility to change and expand their power structure: that is, leaders and managers had to be able to provide staff greater access to resources and increased discretion in decision-making. Such expansion was more likely to be present in an organization where risk-taking by workers was considered normative and was rewarded. Another precondition for empowerment of workers was the ability of the organization to foster inclusion by effective communication, and by providing opportunities for substantive participation with meaningful influence on organizational matters. Along with the organization's openness to the workers' participation, the individual worker needed to demonstrate a sense of trust in and support for the organization. According to Foster-Fishman and Keys, when both organizational and individual preconditions for empowerment were present, the person-environment congruence that emerged became an environment that empowered workers. A workplace that is described as "participative" or having a "participative management style" is one that demonstrates a desire for workers to be involved with their work and with co-workers, and makes opportunities for this involvement to happen both structurally (i.e. committees) and informally (Cormier, 1997; Foster-Fishman & Keys, 1997). Johnson and Hall (1988) found that social support in the workplace, as expressed through workers' involvement with co-workers as well as supervisors' support, was found to be an important buffer in protecting workers' health. These descriptions of what constitutes worker participation need to be tested further in rigorous research.

In large organizations such as hospitals there could be many sub-cultures or cultural pockets where individual workers might experience empowerment even though the overall structure does not promote empowerment of individual workers (Foster-Fishman & Keys, 1997). In a recent study that examined barriers and facilitators to return-to-work, interviews were conducted with stakeholders inside the workplace as well as stakeholders outside the workplace (Frank et al., 1999). It was evident that workplace culture and organizational factors were important influences on forming opinions as to what facilitated a positive return-to-work experience and what contributed to a negative experience of those interviewed (Frank et al., 1999; Friesen et al., 2001).

1.3 The Definition and Parameters of Return-to-work

Return-to-work is both a process and an end point. The process refers to all interventions following the injury, including medical and rehabilitation treatment to facilitate recovery from the injury, as well as the process between the end of active medical intervention and the point at which the worker was back on the job (Manitoba Labour, 1998; Norman & Wells, 2000). Some literature on RTW focused on the latter part of the process after medical treatment was complete even though the person might continue to be involved in rehabilitation for work conditioning, work hardening or vocational counseling (Dyck, 1996). Most literature on disability management, however, viewed the medical intervention as an important part of the RTW process since the initial contact with the worker's physician has been found to be the key to the length of time the worker is off work as well as for setting the tone for the worker's attitude towards the RTW process (Backer, 1986; Frank et al., 1996; Yassi, Cooper, Khokhar, Guzman & Gauthier, 2002).

Return-to-work is a complex process that requires action on the part of workers to do their best to recover from illness or injury (Parsons, 1958), an assessment by a health professional to pronounce the worker fit to work (Isernhagen, 1995), and commitment from the insurer to pay benefits and offer vocational rehabilitation services as needed (WCB Manitoba, 1998, 1999-b). As well, the employer is expected to keep a job open for the worker or to make accommodations for a worker who is permanently disabled (Manitoba Human Rights Code, 1987; WCB Manitoba, 1999-b).

The success of a RTW program or a particular intervention strategy in RTW might be measured by reviewing the duration of injured workers' time away from work before and after the implementation of a particular intervention strategy. Return-to-work strategies are usually described as successful if the overall rate of work injury incidence and the duration of time-lost days in the workplace were reduced from year to year (WCB Manitoba, 1999-b; Shannon et al., 1996; Yassi et al., 1995-b). Other criteria for determining the success of RTW programs might include a change in the number of symptoms experienced and/or a change in workers' use of health services to treat the injury or condition (Beaton, Cole, Manno, Bombardier, Hogg-Johnson & Shannon, 2000).

Many of the strategies and factors that have been found to support injury prevention and safety might also be relevant to facilitating successful RTW experiences (Habeck et al., 1991; Manitoba Labour, 1998; Norman & Wells, 2000). Isernhagen (2000) endorsed the concept of setting up integrated work injury prevention and disability management programs. Feuerstein, Marshall, Shaw and Burrell, (2000) reported on a successful integrated injury prevention and disability management program for sign

language interpreters. Such studies grouped all factors that contributed to work injury: those that were important to injury prevention, as well as those that facilitated or hindered RTW for injured workers as part of one primary construct, i.e. injury prevention plus RTW equals disability management (Isernhagen, 2000; Feuerstein et al., 2000).

Habeck et al. (1991), in a study of Michigan employers, found that companies that reported greater involvement in safety activities and in disability management or RTW activities also experienced lower rates of work injury. Habeck, Scully, Van Tol and Hunt (1998), in a subsequent study of 220 Michigan employers, found that injury prevention activities of safety diligence and training, disability management activities of a pro-active RTW program, and management's commitment to safety all correlated with lower injury costs and fewer days of lost-time due to work injury. The positive correlations were stronger in larger industries of 500 or more employees.

Franche and Krause (2002) recently developed a theoretical framework that would capture the key role of the injured worker in decision-making and change and would also incorporate the impact of interpersonal dynamics within the meso-systems of the workplace, the insurance agency, and the healthcare system. The authors have proposed a model of "readiness for RTW" in which the stages of occupational disability are the framework (such as acute, sub-acute, RTW or chronic disability) in which three behaviour-specific dimensions of change (within the injured worker) are tracked. These dimensions of change include decisional balance (i.e. the decision to go back to work is critical at the sub-acute phase of disability), self-efficacy (a belief in one's ability to successfully negotiate the RTW process), and change processes (includes timing of changes and ensuring adequate supports are in place during the change from acute to sub-

acute to RTW). This model allows for individual differences and for the impact of interactions of the worker with the various systems within the workplace, the insurance agency, and the healthcare system. It is suggested that although this model addresses the behaviours and motivation of the injured worker, it does not address the aspect of how the worker is able to participate (and initiate action) in the RTW process, not only to respond to being "acted upon".

1.4 Definition of Worker Participation

Bernstein (1976), Rooney (1992, 1995) and Whyte (1991) all described worker participation in terms of the breadth, or range, of workers' involvement in decision-making as well as the depth or extent of control over decisions. Areas of decision-making (breadth) might include any or all of: working conditions, wages and benefits, personnel policies and practices, products and marketing, division of company earnings, financing the enterprise and maintaining autonomy on sale of the company (Cormier, 1997; Rooney, 1995; Whyte, 1991). The depth of control in decision-making might range from having no input or being able only to give suggestions at a low organizational level to having a majority share of the votes in decisions that determined policy and overall direction of the organization. Whyte (1991) stated that a fully democratic company would have worker participation in all areas of decision breadth as well as having majority control or ownership in the company. Tomer (1988) examined worker participation in large organizations or bureaucracies and suggested that the level of "power" or influence workers had was determined by factors such as having cooperative working relationships and the level of the organization at which their decisions had an impact. A simple model of the range of worker participation might be constructed as a continuum moving from

information as the lowest level of worker involvement to the next level of worker input, to choice and to involvement in decision-making. However, a model of worker participation would also need to consider the breadth and level of decision-making, which would give further indication of the amount of influence or power a worker would have in an organization, and reflect the extent to which the worker would be able to participate in the workplace (Cormier 1997; Tomer, 1988; Whyte, 1991).

Opportunity for participation within the workplace might be facilitated by the organizational structure, management style, or by managers' attitudes. However, active involvement of the worker within the organization also required a measure of commitment and willingness on the part of the worker to participate (Foster-Fishman & Keys, 1997). Theoretically, worker involvement in RTW following a work injury appeared to be related both to the historical concept of worker participation in the workplace and to the movement towards empowerment among workers and among many minority groups. Empowerment with its emphasis on participation has been incorporated into some models of RTW and disability management (Franche & Krause, 2002; NIDMAR, 2004). In practical terms, workers' involvement in RTW was generally assumed rather than articulated and assessed. Understanding the culture and environment of the workplace appears to be a vital component of understanding workers' participation in the workplace and in RTW. Strategies for promoting workers' involvement in occupational health initiatives such as injury prevention included educational programs that targeted both front-line workers and supervisors (Bohr & Barrett, 1997; Fiske, 1994), joint management and worker teams to implement incentive programs (Melnik, 1990), and a variety of incentive and reward strategies (Rest, 1996).

1.5 The Importance of Worker Participation

1.5.1 Worker empowerment

Gage and Polatajko (1995) defined empowerment as having an active role in the determination of one's care. Empowerment consists of experiencing a change in power so that workers have more say in determining the priorities and process of the rehabilitation and RTW process (Law, Baptiste & Mills, 1995). Empowerment philosophy is essentially about consumer-control; "not about medical professionals deciding what we should do... it's about working together" (Walters & Ternette, 1994, p.56). Empowerment refers to the "process of gaining influence over events and outcomes of importance to an individual or group" (Fawcett et al., 1994, p. 471). The concept of empowerment is based on the idea of legitimated power or authority as an attribute of organizational positions (Hasenfeld, 1991); power in organizations involves the right to make decisions that affect one's own work and others' work activities.

Foster-Fishman and Keys (1997) found that both the organization and individual workers had a role in empowering the worker. While the organization needed to promote a culture of openness to risk-taking and change, the individual needed to demonstrate a desire for change and a desire to increase control over his or her work activities. According to Florin and Wandersman (1990) and Zimmerman and Rappaport (1988), individuals who had this desire were more likely to pursue opportunities for change and empowerment. Townsend et al. (1997) and Wilcock (1998) developed the concept that, in order to be healthy, people had to participate in meaningful occupational activities that were freely selected. That the work was freely chosen gave evidence that workers were being empowered through active and meaningful participation.

1.5.2 Meaningful participation

Investigators have identified the need for meaningful or intensive worker participation, that is, participation in decision-making and planning, not just consultative participation. Meaningful participation was described in similar terms to empowerment, i.e. having influence over some aspect of the plans and decisions (Bernstein, 1976; Cormier, 1997; Olsen, 1992; Rooney, 1992; Shannon et al., 1997). "Worker empowerment" was viewed as an aspect of worker participation that was closely related to workers' internal capacity to direct their own affairs, also called having an "internal locus of control" or "self-efficacy" (Mitchell et al., 1990; Ekeberg et al., 1997; Mitchell et al., 1990; Schwarzer, 2001; Strauser, 1995; Trief & Donelson, 1995). Leslie, Holzhalb and Holland (1998) postulated that a worker who felt empowered would also score positively on scales that measured internal locus of control and job satisfaction; this was supported in their research with business workers and social service workers. It seemed evident from these studies that worker empowerment was closely linked to worker attitudes and characteristics such as self-determination, openness to change, self-efficacy, and working in a team.

It is suggested that, although worker participation and empowerment are discrete constructs, a worker's sense of empowerment may be a positive outcome of meaningful participation in the workplace.

2.0 History of Worker Participation in the Workplace

Engagement in occupation is part of our biological heritage based on the development of capacities such as the ability to use our hands, visual perception, and consciousness (Wilcock, 1998). Throughout history, work has been compelled by

material privation: the need for shelter and food (Wisman, 1991). Wilcock argued that human beings have always had a need for meaningful occupation. To be engaged in occupational activities for the sole purpose of survival apparently is not enough. The ability and need to be creative and to form social relationships are basic to all humans; occupational activity for early hunter-gatherer and agrarian groups encompassed both the need for survival as well as creativity and social intercourse. Wilcock stated that it was only when civilization became urbanized and industrialized that human beings were unable to combine play, creativity and work; division of labour and leisure became the norm (Wilcock, 1998; Morris, as cited in Morton, 1973). Although Greene, a theologian, (personal communication, 2002) disagreed with the premise that industrialization was solely to blame for the division of labour and enjoyment, he agreed that the loss of an agrarian way of life resulted in people being separated from directly enjoying the fruits of their labour. Greene also pointed out that when people left the agrarian way of life, they experienced a disruption of living within the natural rhythm of nature and its seasonal cycles of activity and rest and that this disruption might also have contributed to loss of satisfaction with work.

Although a full understanding of the role of workers as participants in the economy of a society is beyond the scope of this study, it is important to acknowledge the extensive history and multiple forms of worker participation in the workplace through the centuries and decades. A brief overview will be given of industrial (workplace) democracy and the forms of worker participation that have influenced current concepts of worker participation and worker empowerment. The concept of worker participation within RTW as explored in this study, although differing somewhat from the historical

roots of worker participation, nevertheless may be viewed as part of the overall continuum of industrial democracy and workers' involvement within the workplace.

2.1 Economic Ideologies and Worker Participation

At least two major streams of economic ideologies–capitalism and communism--were prevalent in the 18th and 19th centuries. Capitalism may be defined as an economic system characterized by private or corporate ownership of capital goods, by investments that are determined by private decision, and by prices, production, and the distribution of goods that are determined mainly by competition in a free market (Woods, 2003). Communism is a system of political and economic organization in which property is owned by the state or community and all citizens share in the common wealth, more or less according to their need.

2.1.1 Capitalism

Adam Smith, an economist and philosopher who lived in the 18th century, published one of the first books on political economy in which concepts such as the division of labour and free enterprise were closely examined. He presented capitalism as an ideology in which the profits belonged to the owners and workers who, although necessary to the production process, were not direct participants in the product of their labour (Smith, as cited in Campbell, Skinner & Todds, 1975). Workers were viewed as a commodity, to be used as and when needed and to be "discarded" when they were greater in number than required in order to produce the goods demanded by the marketplace. For the average worker who was not a property owner, labour and the fruits of labour were often unequally divided and the prospect of starvation was very real for many people (Wisman, 1991). Karl Marx accused Adam Smith (Marx, as cited in Tucker, 1978) of

promoting the belief (and the practices that resulted from those beliefs) that labour was a burden and a sacrifice, not to be associated with enjoyment and creativity.

2.1.2 Communism

Karl Marx, born in the early 19th century, asserted that when labourers were alienated from the product of their labour they subsequently became estranged from other humans as well. Marx (as cited in Elliott, 1981) asserted that the result of the capitalist view of the worker that alienated the labourer from the production process and the product was that the worker became a commodity and was vulnerable to exploitation. Private ownership of property was also an outcome of alienated labour. In Marx's ideal society, no one person would be coerced into an exclusive sphere of activity but each could work at a variety of work activities. Society as a whole would regulate both the ends and the means of production. For Marx, the labour of production should be an enjoyment of physical, intellectual and social activity (Marx, as cited in Tucker, 1978). In its truest form, labour and production were collective activities that allowed each person in the community (i.e. the collective or group) full expression of his or her capacities. Alienation of the labourer and the product of labour was a basic tenet of Marx's philosophy and appeared to be a driving force behind the proposed development of communism as a political and economic answer to restore connection between the labourer and the labour in a collective sense, that is, for the whole society (Marx, as cited in Tucker, 1978; Marx, as translated by Fowkes & Fernbach, 1977).

2.1.3 The need to integrate the labour and the labourer

The concept of worker participation is rooted in both economic and political forces (Schiller, 1991). It was suggested by Schiller that the economic root of worker

participation referred to workers' need for an adequate share of the profit in order to meet their basic survival needs of food, shelter and clothing. The political root of worker participation was considered to be the struggle to obtain the "enjoyment" or the fruits of labour. Thus, worker participation may be viewed as the need for human beings to integrate their occupational activities in order to meet not only their biological needs but also their need to use fully their capacities and to be rewarded by the use of those capacities (Wilcock, 1998).

2.2 Workplace Democracy

2.2.1 Employee involvement

Worker participation in the workplace has been considered to be an integral aspect of industrial and economic democracy (Schiller, 1991; Olsen, 1992). Aspects of worker participation in the workplace ranged from worker control and worker involvement in specific work tasks to involvement in the management and production decisions of the organization (Cormier, 1997; Juravich, 1985; Schiller, 1991). Industrial or workplace democracy was considered to be fully present when businesses were completely managed by the workers (Gunn, 1984), or businesses were fully owned by the employees (Rooney, 1995), or at least where employees had the majority power to make decisions or changes to determine the direction of the company or enterprise Whyte (1991). However, the form of organization in a democratic workplace can range from self-managed cooperatives to more traditional hierarchical or "top-down" management models (Tomer, 1988; Whyte, 1991). Whyte (1991) suggested that fully democratic companies tended to be small worker cooperatives whereas democratic partnerships, democratic non-profit businesses, and democratic collectives tended to be larger

enterprises.

2.2.2 Employee ownership and worker cooperatives

A worker cooperative is one in which workers participate in decision-making, profit and ownership. It is often assumed that such complete worker participation has a positive effect on productivity, work quality, worker morale, efficiency and flexibility to change (Estrin, Jones & Svejnar, 1987). However, according to Canforth and Paton (1991), the establishment of worker cooperatives tends to be cyclical phenomena, arising because of some social and economic crisis, and diminishing in number as unemployment rates drop. They were often short-lived because of take-overd by larger companies or because of their inability to be flexible in adapting to changing market needs due to their small size or low reserve of capital funds (Canforth & Paton, 1991).

The highly successful Mondragon cooperatives in Spain, started in the early 1900's, are an example of a complex of worker cooperatives that were committed to basic values of equality, solidarity, dignity of labor, and participation, such that participation referred not only to members' rights but also members' obligations to participate in decision making (Whyte & Whyte, 1991). The cooperative developed a set of guiding principles, one of which was the principle of balance between the economic requirements of the firm and the socio-economic interests and needs of individual members. This enabled them to be flexible in a competitive market as well as to continue to be a democratic enterprise.

2.2.3 Workplace democracy in Sweden and North America

The concept of worker participation in modern society may be exemplified by the Swedish approach to economic democracy. Sweden extended the progress of economic

democracy through the development of a largely unionized labour force as well as through legislation to support the participation of workers in the workplace (Greenberg, 1975; Olsen, 1992, 1999). Political democracy and workplace democracy were linked so that workplace democracy (by way of legislation as well as negotiation) kept pace with political democracy. According to Olsen (1988, 1999), although political democracy was the foundation of government in North America, workplace democracy did not keep pace with democratic rule and, in contrast to Sweden, has not gained a major foothold in this continent.

2.3 Worker Participation in Canada

2.3.1 Unions and collective agreements

Membership in a labour union continues to be one of the primary structures for worker participation in Canadian workplaces, and collective bargaining has been perceived as the "most promising route to industrial democracy" (Jain, 1990, p. 280). Jain analyzed changes and trends in Canadian industrial relations and their impact on employee participation in three areas: collective bargaining, employee involvement and participation in technological changes, and employee ownership and gain-sharing programs. He concluded that joint labour-management committees could be beneficial in activities such as introducing technological change. Deutsch and Schurman (1993) suggested that pro-active involvement of unions in workplace restructuring was the best way to assure improvement of health and safety as well as to assure upgrading of skills for technological change. Recent bi-partite efforts to develop injury prevention and RTW services by the Occupational Health and Safety Agency for Healthcare in British Columbia (OHSAH) appear to be effective in reducing work-related injuries (2003).

Since its inception, NIDMAR has promoted the concept of collaboration between unionized workers and management to facilitate RTW and accommodation for injured workers in the workplace.

2.3.2 Employee ownership and gain-sharing

Jain (1990) stated that, in Canada, profit sharing and stock-ownership plans might not involve employees in managerial decision-making but organizations that promoted such plans reflected an attitude within the organization that employees were partners in the enterprise. The McDonald Commission on Labour-Management Cooperation in Canada concluded that companies that offered profit sharing involved workers at a greater level of participation in decision-making (Riddle, 1986). Another aspect of employee ownership was seen in some companies that resorted to employee buy-out plans as a means of conserving jobs in response to failing business and the threat of complete closure (Jain, 1990). One example of this is the Pine Falls paper mill in Manitoba (Pine Falls, Hansard, Government of Manitoba, 2003).

2.4 Occupational Health and Safety

Research studies conducted with regard to occupational health issues include health promotion (Bohr & Barrett, 1997; Helmer, Dunn, Eaton, Macedonio & Lubritz, 1995), safety education (Harshbarger & Rose, 1991), work injury incidence and related costs (Norman et al., 1998; Shannon et al., 1997), and RTW policies and programs (Dyck, 1996; Fiske, 1994; Frank et al., 1995; Krause et al., 1998). Return-to-work program development, as a specialized area of occupational health, gained priority as a research area when insurers (especially workers' compensation agencies) and employers intensified efforts to decrease injury costs by targeting the development of RTW

programs (King, 1993; Shrey, 1996).

2.4.1 Worker participation in health promotion

Rest (1996) in a discussion paper, proposed that occupational health and safety professionals need to promote worker participation in all health promotion and injury prevention initiatives, citing a number of European countries (such as Sweden) that have promoted and legislated worker involvement in occupational health programs. In a comparative survey of European Economic Council member countries, worker participation via representative organizations (such as unions) in health promotion and injury prevention education was found to be given legal status, but in actual practice the representative bodies tended to be limited to giving recommendations for safety and health without the power to insist on their implementation (Gevers, 1983). Nevertheless, Gevers concluded, countries that had representative participation tended to have a better record of occupational safety than countries that had no participation. Sorensen, Stoddard, Ockene, Hunt and Youngstrom (1996) evaluated worker participation in a health promotion project in Australia and found there was a significant association between participation in health promotion activities and reduced number of exposures to health risks such as smoking. They also found that when workers were aware of management's involvement and active promotion of health activities, they were more likely to take part in those activities. This would support a value of having leadership from management in safety and health activities (Habeck, Leahy, Hunt, Chan and Welch, 1991).

2.4.2 Worker participation in ergonomic teams

King, (1994; 1998), on the basis of her review of the research literature and the Occupational Safety and Health guidelines (United States) for ergonomics program management, recommended that direct worker involvement in ergonomics teams was essential if the benefits of injury prevention along with production goals and job satisfaction were to be realized. Participatory ergonomic teams were found to be an effective means of injury prevention in meatpacking industries (Moore and Garg, 1996). Ergonomic programs that promoted worker participation in RTW were examples of workplace policy that advocated worker participation in a complete process, from identification of problems to planning interventions and implementing adaptations (Ekeberg, Lagerstrom & Lutzen, 1997; King, 1994; Moore & Garg, 1996; Norman & Wells, 2000; Olson, 1999). These ergonomic programs were not necessarily specific to injured workers for RTW but were likely to be an approach to overall injury prevention and safety in the workplace.

2.4.3 Demand-control theory in worker health

According to Karasek and Theorell (1990) and Haines, Hurlbert and Zimmer, (1991), workers in a wide range of organizations showed evidence that having some control over one's job activities or job demands related positively to a worker's health. When workers experienced low levels of control and high demands in their jobs, they were likely to be at an increased risk for cardiovascular disease (Johnson & Hall, 1988; Karasek et al., 1981), mental or psychosocial illness (Jenkins, Harvey, Butler & Thomas, 1996; Lehmer & Bentley, 1997), and musculoskeletal disorders (Bongers, deWinter, Kompier & Hildebrandt, 1993; Feyer et al, 1992; Houtman, Bongers, Smulders &

Kompier, 1994; Koehoorn, 1999: Leino & Hanninnen, 1995). Although not specifically focused on occupational health activities, these studies support the premise that increased worker participation in the workplace overall (i.e. increased involvement with their jobs and with other workers, and control over job activities) appears to be important to the maintenance of worker health.

2.4.4 "Intensity" of worker participation

Rooney (1992) found that "intensity" in worker participation, i.e. the depth or level of involvement within the organization, was important in reducing injuries in the workplace. Lewchuk, Robb and Walters, (1996) and Shannon et al. (1996) found that that the incidence of workplace injury was reduced in workplaces that had "active" joint workplace health and safety committees, in contrast to committees that tended to be a legal or structural formality and had little power to introduce change. Krause et al., (1998) in their review of modified work programs, did not report on the role of worker participation in any programs. Some workplaces that had RTW programs for workers recovering from injury or illness incorporated worker participation through "RTW teams" which had one or more designated worker representatives, often appointed or elected by the union (Clarke, Cole & Ferrier, 2000; Frank et al., 1999; Friesen et al., 2001). Both managers and workers generally viewed these teams positively (Friesen et al., 2001). It is suggested that the relative absence of examples of worker participation in RTW programs may be an important omission that requires study.

2.4.5 Changing trends in union-management relations

Jain (1990) reviewed union-management relationships in Canada and concluded that structural forces such as competitive pressures from Japan, technological change, and

global trading agreements have forced labour and management to make adjustments and adaptations to collective bargaining, employee involvement, and participation in technology changes. He also concluded that the recent trends in participatory mechanisms has led to a movement away from 'job-control unionism' to a role that has involved greater consultation and planning between management and labour. Keller (1995) in a review of worker participation models in several countries including Britain, Japan, United States, Continental Europe and Canada also found that the nature of employee involvement was changing from participation via labour unions to mechanisms of joint labour-management committees involving consultation and planning, generally initiated by management. In contrast, Alexander (1975) argued that the forces of history supported the concept of workers needing to 'contain authority and to regulate its boundaries' and that this need resulted in ambivalence in working cooperatively with management in non-traditional mechanisms. For this reason, both Alexander (1975) and Verma (1989) argued, trade unions have been skeptical about-and even resistant to, worker participation on health and safety committees or worker participation in managerial decision-making. Lewchuk and Robertson (1997), in a study of "lean production" organizations in auto manufacturing plants in Ontario, found that, although "lean production" was promoted as model of managing that involved workers to a greater degree in production decisions, workers did not necessarily enjoy any greater sense of empowerment than in plants that did not manage in the "lean production style".

2.5 Management-initiated Participation in the Workplace

Management strategies during most of the 20th century were based on an assembly-line production model and a management style that gave workers no means or

opportunities for input or participation into production planning or policy decisions (Lewchuk & Robertson, 1997). The Taylorist approach of "scientific management" was based on the concept that efficiency of production was achieved through reductionism, or subdividing jobs into smaller and smaller tasks; Fordism was an assembly-line form of production that applied the Taylorist principles to the automobile industry (Finlay, 2002). Lewchuk and Robertson suggested that an aspect of Fordism was that workers were intentionally kept ignorant of the overall company goals and decisions. According to Rest (1996), this model of "scientific management" placed responsibility for workplace accidents on the shoulders of workers who "deviated from the script" or who dared to go beyond the proscribed boundaries of their jobs. During the 1980's and 1990's, various forms of management strategies were initiated to include the worker and gain worker participation while seeking to increase productivity. These were variously called work groups, quality circles, joint labour-management teams, participative management, job enrichment, continuous quality improvement, or quality of working life plans (Appelbaum & Batt, 1994; Bluestone & Bluestone, 1992; Finlay, 2002; Parker & Slaughter, 1988). Rest (1996) critiqued this management-initiated call for increased worker participation by suggesting that workers needed to resist participatory programs that placed productivity improvements above worker health and safety.

"Lean production" or "flexible enterprise" are terms for the recent phenomenon in industry that claims to better use workers' skills and knowledge while also giving them more control over their work environment (Finlay, 2002; Lewchuk & Robertson, 1997). Lewchuk and Robertson (1997), in a survey study among Canadian autoworkers, found that when work groups were introduced along with lean production in a workplace,

worker satisfaction was generally not improved and production levels did not improve. It may be argued that these were strategies designed by management to increase productivity by enhancing workers' sense of involvement and job satisfaction (Batt & Appelbaum, 1995) but did not incorporate any great breadth or depth of worker participation and were therefore ineffective (Olsen, 1999). Although these models were described as able to expand workers' involvement in decision-making and setting policies, Olsen suggested the research on lean production (thus far) has not been conclusive about the success of this model of worker participation. Lewchuk and Robertson (1997) also suggested that there were still unanswered questions on the long-term effects of lean production and worker participation.

2.5.1 Relationships between worker participation and productivity

Rooney (1988), in a sample of 172 firms, studied the relationship between employee-owned businesses and productivity and concluded that "meaningful" worker participation might be as important to production as employee ownership in affecting workers' attitudes and performance. Cormier's (1997) findings in a "job time analysis" of the entire production process in a unionized manufacturing plant suggested that worker participation had a positive influence on production and that "meaningful" participation or the ability to effect real change was seen as important by the workers. Levine and Tyson (1990), in a discussion paper, supported the concept that productivity was increased when there was greater input by workers into workplace organization and management but emphasized that the effects were more likely to be long-term when this involved "substantive decision-making" rather than purely consultative or information-giving arrangements, and when it occurred in an environment of commitment by

employees and trust between employees and management.

2.6 Legislation Affecting Worker Participation

2.6.1 Safety in the workplace

The Canada Labour Code provides every employee with three rights: the right to know, the right to participate, and the right to refuse dangerous work (Canada Labour Code-135, 2000). The Manitoba Workplace Safety and Health Act (1987, 2002) legislates the worker's right to refuse dangerous work. The employer is given the responsibility to provide a safe working environment; the worker is responsible to use all available safety equipment and exercise safety precautions in carrying out work activities (Manitoba Workplace Safety & Health Act, 1987).

2.6.2 Joint workplace health and safety committees

Every workplace with fewer than 20 employees must have an occupational safety and health representative, and every workplace with 20 or more employees must have an occupational health and safety committee with representation from both the employees and the management (Manitoba Workplace Safety & Health Act, 1987, 2002). The Act also states that employees have the right and responsibility to participate in identifying and correcting job-related safety and health problems through the mechanism of their safety and health representatives or committee members.

The effectiveness of each committee remains dependent on the workplace culture, especially the relationship between unions and management. It was (and continues to be) primarily through worker organizations (i.e. unions) that workers are able to participate in workplace safety and health decision-making and to advocate for job accommodation for workers with permanent disabilities (Manitoba Labour Education Centre, 1995). Clarke

(1982), in reviewing the evolution of workplace health and safety committees in Canada, concluded that the committees were effective in solving many problems of health and safety in the workplace. In contrast, Sass's (1986) analysis of occupational health and safety in Canada reported that lack of worker rights to control work processes was a major contributor to increased injuries. Lewchuk et al. (1996) studied the effectiveness of joint health and safety committees in Ontario workplaces and concluded that workplaces that had developed an "internal responsibility" for safety prior to legislation concerning health and safety committees had a more effective safety program with reduced incidence in workplace injuries than workplaces without safety programs prior to legislation. Nevertheless, they also found that having legislated committees was better than having no legislation as there was some overall positive effect on safety practices and reduced work injuries (Lewchuk et al., 1996).

2.6.3 Return-to-work and job accommodation

Injured workers who are unable to return to their previous jobs can benefit from the guidelines for job accommodation as outlined in the Manitoba Human Rights Code (Manitoba Human Rights Commission, 1996). Both federal and provincial legislation such as the Manitoba Human Rights Code, the Employment Equity Act, and the Workers' Compensation Act support the societal value that workers with physical or mental challenges have a right to participate in the workforce (Turnbull, 1994; Manitoba Human Rights Commission, 1996; Manitoba-WCB, 1998; 1999-b). Some labour organizations such as the Manitoba Federation of Labour formally recognized the benefits of job accommodation for workers with physical or mental limitations by assuring true equality for workers, and adopted policies that affirm unions' support for

workers who require some type of accommodation in order to obtain or maintain competitive employment (Manitoba Labour Education Centre, Manitoba Federation of Labour & Manitoba League of the Physically Handicapped, 1995). However, Clarke et al. (2000) found, during interviews with RTW stakeholders in Ontario, that in actual practice, job accommodation as a means of sustaining employment for injured workers remains difficult to implement.

3.0 Barriers and Facilitators of Return-to-Work

3.1 Disability Management

Disability management, also called RTW programming, refers to the range of strategies and interventions provided for workers, who have been injured and/or experienced a disabling condition, in order to enable them to safely return to work as early as possible. Although disability management programs are optimally situated within the workplace (Brooker, Clarke, Sinclair, Pennick & Hogg-Johnson, 2000), interventions from a variety of health-care and/or vocational rehabilitation practitioners may be offered outside the workplace either via the provincial healthcare system or the insurance (workers' compensation) system.

Various intervention models and strategies have been proposed for successful RTW such as case management (Backer, 1986; Gardner, 1991; Tate et al., 1986), work hardening (Cooper, Tate, Yassi & Khokhar, 1996; Jundt & King, 1999; King, 1993), temporary 'reassignment' to an alternate job or to modified work (Helm, Powell & Nieuwenhuijsen, 1999; Jundt & King, 1999; Krause et al., 1998; Loisel et al, 1997), ergonomic interventions in the workplace (Norman & Wells, 2000; Olson, 1999; King, 1994; Waters & MacDonald, 2001), and workplace based multi-component interventions

(Loisel et al., 1997; Yassi et al., 1995). Interventions have also included single-strategy treatments such as back care education (Bonaiuti & Fontanella, 1996; Papciak & Feuerstein, 1991). Epidemiological studies in RTW literature were useful in determining the causes of work injury, factors that assisted workers in returning to their job and factors that appeared to be relevant in situations in which RTW was unsuccessful (Ash & Goldstein, 1991; Bigos, Spengler, Martin, Zeh, Fisher & Nachemson, 1986; Habeck et al, 1991; Shannon et al, 1997; Tate, 1992; Yassi et al., 1995-a; 1995-b). Although many types of injury and disability were addressed in the literature, some of the most complex and most studied injuries were soft-tissue musculoskeletal injuries, especially low-back injuries (Bigos et al., 1986).

3.1.1 Case management

Tate, Habeck and Galvin (1986) examined work-related disability expenditures for New Jersey and expressed the opinion that the development of disability management throughout the 1980's was an attempt to control overall injury costs by establishing a multi-faceted approach to facilitating the recovery and RTW of injured workers through case management practices. As defined by Shrey (1996), disability management is primarily a case-based approach that has been used to coordinate rehabilitation and RTW services in both the community and in the workplace. Shrey (1996) in a discussion article, described what he termed a paradigm shift within disability management from community-based service interventions to worksite based services, concluding that worksite based services were more cost-efficient, and were empowering for the employer, putting the responsibility for their workers back into their hands rather than into the hands of outside consultants or insurance companies. However, worker

participation in this context of disability management was a loosely defined concept and appeared to be related to the expectation that workers would cooperate with the "program" and that workers benefited from early return-to-work physically, psychologically and socially (Habeck & Hunt, 1999; Shrey, 1996; Shrey & Hursch, 1999).

3.1.2 Work hardening

Work hardening was generally described as a multi-disciplinary approach to RTW incorporating physical therapy, occupational therapy, and occasionally other rehabilitation professionals such as a psychologist, vocational counselor or occupational health nurse (Cooper, Tate, Yassi & Khokar, 1996; Jundt & King, 1999; King, 1993). The goal of work hardening is to return injured workers to their jobs as quickly as possible and in fit condition to perform the physical demands of their jobs. Work hardening was found to be an effective intervention to facilitate RTW for injured workers who had been away from their jobs for at least six months (Johnson, Archer-Heese, Caron-Powles, & Dowson 2001).

3.1.3 Modified work

The use of temporary 'reassignment' to an alternate job or to modified work activities, as a strategy to return to full-time work, appears to be a positive and effective intervention in RTW programming (Durand & Loisel, 2001; Friesen et al., 2001; Helm, Powell & Nieuwenhuijsen, 1999; Jundt & King, 1999; Krause et al., 1998; Loisel et al., 1997). Brooker, Cole, Hogg-Johnson, Smith & Frank (2001) found among 1833 workers in Ontario that workplaces that offered assistance to injured workers such as modified work arrangements also experienced reduced compensation duration.

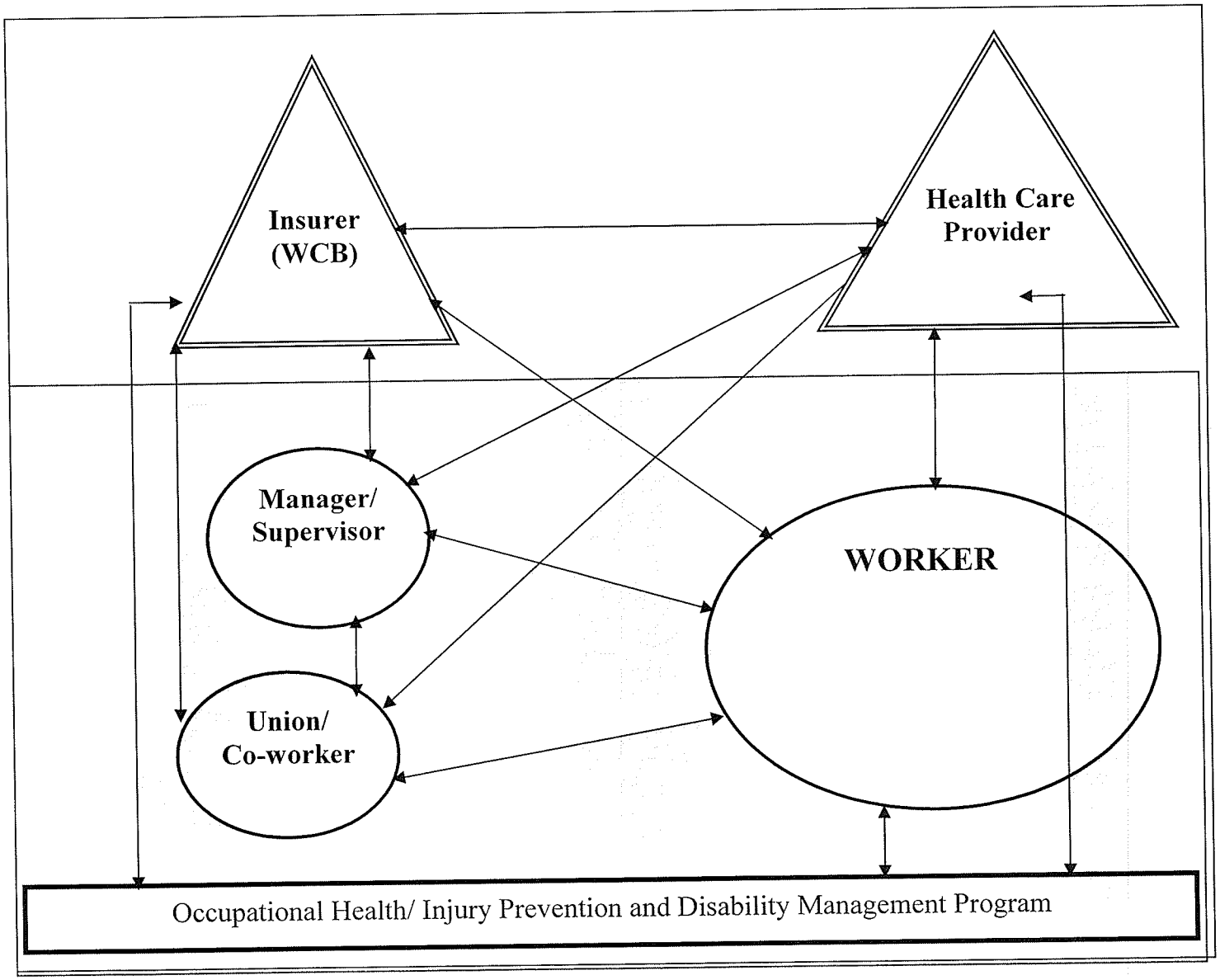
3.1.4 Supervisor training

Pransky, Shaw & McLellan (2001) in a pilot study introduced a training program for 108 supervisors in seven New Hampshire companies that focused on creating positive attitudes and behaviours among supervisors. Although too small to gain significance, both supervisors and employees reported decreased time-loss due to injury.

3.1.5 Multi-component interventions

Loisel et al. (1997) and Yassi et al. (1995-b) in two separate studies demonstrated the success of early RTW with manufacturing workers and with healthcare workers through multi-component interventions including physical therapy, occupational therapy, education for injury prevention, modified work, and a time-graduated RTW process. It was apparent that responsibility for work safety, prevention of injuries, and management of work injury were increasingly viewed as the responsibility of many stakeholders and did not have single-stakeholder or single-strategy solutions (Shannon et al., 1997; Tate et al., 1986; Manitoba-WCB, 1998). A model of multi-component intervention was developed by Yassi (personal communication and website in development, 2000) that placed the worker, within the workplace, at the centre of the RTW activity. Through coordinated efforts of the workplace, specifically the occupational health department, union representatives, supervisors, and managers, as well as the healthcare system and insurance (WCB) system, the worker was enabled to return to work as early as possible and without undue risk of re-injury (see Figure 2).

Figure 2 Multi-component Model for Return-to-work (Yassi, 2000, personal communication)



In a qualitative study looking at employers' strategies for managing injured workers, Habeck, Scully, VanTol, and Hunt (1998), identified the most successful strategies for employers to promote RTW as well as reduce workplace injury. These included involvement and leadership of management in safety and injury prevention programs, having policies and programs in place to address work injury and return-to-work in a timely and comprehensive manner, and promoting a culture of safety awareness within the workplace. Two variables found to be important for employer success in disability management required worker involvement in a structured format including labour-management cooperation (in a committee structure) and safety training for all workers. These elements suggested that worker participation was essential to the success of disability management and RTW even though there were limited structured opportunities for worker involvement.

Success in returning injured workers to their jobs has been found to be influenced by numerous factors including characteristics of the worker (Bigos et al., 1986; Sinclair et al., 1995), the physical job demands (Cooper et al., 1997-a & -b; Yassi et al., 1995-b), the workplace environment or culture (Frank et al., 1999; Friesen et al., 2001; Norman et al., 1998: Norman & Wells, 2000; Shannon, 2000; Shannon et al., 1996, 1997), healthcare practices and insurance policies which affected the worker, as well as economic or social conditions outside the workplace (Baril et al., 2002; Friesen et al., 2001; Gunderson & Hyatt, 2000). These factors were further explored in a qualitative study in three provinces in Canada in which workers and other stakeholders from a variety of occupations and work sectors were interviewed about their perceptions of what

determined success in a RTW process and what were the barriers for RTW (Clarke et al., 2000; Friesen et al., 2001; Stock et al., 1999).

3.2 Worker-centered Factors in RTW

3.2.1 Worker demographics

Worker variables that were found to be significant in facilitating or hindering RTW included demographic variables, socio-economic variables, history of work-related injury, participation in rehabilitation intervention, workers' sense of self-efficacy, and workers' attitudes and desire to RTW.

A worker's age was not consistently an indicator of time-loss due to injury before returning to work. In some studies, older workers who had seniority, more work skills, and higher education tended to RTW earlier (Lanes, Gauron, Spratt, Wernimont, Found & Weinstein, 1995; Tate, 1992; Voaklander et al., 1995). In other studies, older workers had a lower rate of injury but tended to be off work for longer periods of time (Bigos et al.,1986; McIntosh, Frank, Hogg-Johnson, Bombardier & Hall, 2000). Kenny (1994) found older workers, those who worked part-time, and those who earned a lower pay were off work for longer periods of time than other workers.

Gender was also an inconsistent indicator for RTW. Bigos et al. (1986) reported that women experienced fewer injuries but tended to be disabled from work for longer periods of time. McIntosh et al. (2000) in their study of factors related to increased time spent receiving workers' compensation benefits did not find gender to be a significant factor regardless of the type of injury sustained. Young and Russell (1995), however, found that gender was a RTW indicator in a study of RTW among teachers; female teachers were more likely to return to their jobs than male teachers.

3.2.2 Severity of injury

Severity of injury was reported to be associated with increased time away from the job (Tate, 1992; Gardner, 1991). This factor, however, is somewhat inconclusive in that Lancourt and Kettelhut (1992) reported that there were no significant differences in physical findings of workers who returned to work and those who did not. However, if the study included individuals with catastrophic injuries such as spinal cord injury or head injury, the severity of these injuries was usually a prognostic indicator for duration of time lost from work (MacKenzie et al., 1987).

3.2.3 Perceived disability, fear, and psychosocial factors

Perceived disability due to pain was frequently present in workers who experienced long periods of work disability (i.e. time lost from work due to injury). Himmelstein et al. (1995) found that individuals who were disabled from work, compared with others who had similar diagnoses but continued to work, were more likely to report higher levels of pain and were given to "catastrophizing". Cooper et al. (1996, 1997-a) found that nurses with back injury who experienced residual disability tended to report higher levels of disability due to pain. Lancourt and Kettelhut (1992) also found that workers who had not returned to work scored higher on a scale that measured perceived disability due to pain than workers who had returned to work. Papciak and Feuerstein (1991) found that workers who reported increased pain perception were less likely to return to work, and Hazard et al. (1991) reported that workers who demonstrated "disability exaggeration" were less likely to RTW.

Tarasuk and Eakin (1994) found, in a qualitative study, that workers who experienced difficulty in returning to work often expressed a fear of re-injury. Whether

the fear of re-injury and perception of pain were linked was not shown in any of the studies that were reviewed. Workers who had a previous injury were at a greater risk for re-injury (Baldwin, Johnson & Butler, 1996; Bigos et al., 1986-a; Yassi et al, 1999). Psychological illness such as the presence of depression (Ash and Goldstein, 1991) was shown to be associated with work disability. In a study by Feyer et al. (1992) that compared workers with back pain who were working at the time of the study to subjects who had back pain but were not working, it was found that working subjects had fewer psychological disturbances and less dissatisfaction with their jobs than subjects who were not working, regardless of the severity of the disability. These findings may be used to support the concept that it is healthier for an injured worker to remain on the job rather than to take extensive time away from the job (Wilcock, 1998).

3.2.4 Worker self-efficacy

Self-efficacy is an optimistic belief about one's personal ability to cope with a variety of stressors, and competence to deal with challenging encounters. The construct of self-efficacy as introduced by Bandura (1977, 1992) represented a core aspect of social cognitive theory and referred to personal action control or agency. This "can-do" cognition mirrored a sense of control over one's environment. It could be regarded as a self-confident view of one's capability to deal with certain life stressors (Schwarzer, 2001). Self-efficacy (Bandura, 1992) made a difference in how people felt, thought and acted. A low sense of self-efficacy was associated with feelings of depression, anxiety, and helplessness. A sense of competence in cognitive processes affected one's quality of decision-making and level of motivation in pursuing challenging tasks. Once an action had been taken, highly self-efficacious persons tended to invest more effort and persist

longer than those who scored low in self-efficacy; they recovered more quickly from setbacks and maintained a commitment to pursue their goals. Self-efficacy – high or low – would enhance or impede motivation (Bandura, 1992).

Interpersonal dynamics and structures that allowed for and encouraged worker participation and empowerment in the recovery and RTW appeared to be important to the well-being of the worker and his or her ultimate RTW (Ekeberg et al., 1997; Mitchell et al., 1990; Rest, 1996; Walker, 1992). A worker's sense of disempowerment in the RTW process appeared to be linked with the sense of being unable to understand or to negotiate the "system" (Friesen et al., 2001; Mitchell et al.). The "system" in this context referred to the numerous organizational and bureaucratic structures within the health and insurance systems that were involved in assisting the injured worker. It also referred to the multiple and complex human interactions, within those structures, which were necessary to facilitate successful RTW (Friesen et al., 2001). Cole, Beaton and Shannon (1995) indicated that the failure of workers to recover a sense of control over their lives was a key step in prolonging the disability.

Professionals in the field of industrial rehabilitation literature claimed that workers with an injury or disability had to be motivated or have a sense of self-directedness in the rehabilitation and return-to-work process in order to benefit fully from the rehabilitation intervention, gain improved functional abilities and be able to return to their jobs (Menard & Hoens, 1994; Smith, 1994; Velozo, 1993). Menard & Hoens (1994) found in their work with injured workers that performance in work rehabilitation activities required not only a range of complexity in motor performance but also depth in personal volition that enabled them to engage in the process of RTW. Frank et al. (1999)

in a three-province qualitative study on RTW found that workers' commitment to, and participation in, rehabilitation and successful return-to-work (RTW) following workplace injury appeared to be an important element in the process of RTW. Sinclair, Sullivan et al. (1995) presented a framework for RTW in Ontario indicating that the worker was an important component in the process for RTW.

Although self-efficacy has been shown to be domain-specific, (that is, a person may have differing levels of self-efficacy in several domains of function), it has also been conceptualised as a global confidence in one's coping ability across a wide range of demanding or novel situations (Schwarzer, 1994). Worker empowerment as described by Foster-Fishman and Keys (1997) was a person-environment interaction in which the pre-conditions were a work environment with opportunities for worker involvement and the worker's personal desire to change and gain greater control over work activities. Based on earlier research (Friesen et al., 1999), it was postulated that workers' ability to participate in a RTW program was based, in part, on a positive self-efficacy or belief in their ability to negotiate their way through the various healthcare, insurance and workplace systems. When given opportunity to participate in the RTW process, such workers (it was hypothesized) would be more likely to "self-manage" and to be successful in returning to work after a workplace injury.

3.2.5 Worker participation in RTW

Based on the literature review, it appears that worker participation in the process of RTW was often assumed to be actively present; and that the type of participation described in RTW programs was sometimes more indicative of a person's compliance with a particular RTW process rather than an indication of true choice and decision-

making power (Frankcom, 1992; Mitchell et al., 1990; Trief & Donelson, 1995; Walker, 1992). Frankcom (1992) studied the effect of the workers' compensation system on workers' sense of self-efficacy and found that workers often felt controlled by the system; they felt that they were not allowed to have any input into the RTW process. Mitchell et al. (1990) agreed with Frankcom's (1992) conclusion but added the hypothesis that workers may also have entered the workers' compensation system with a lowered self-efficacy due to the loss of their ability to earn an income. Trief and Donelson's (1995) analysis of the impact of the workers' compensation system on quality of life concluded that the WCB environment fostered destructive anxieties and negative health perceptions. Walker (1992) argued that the current "system" of workers' compensation actually fostered the development of "learned helplessness" by its complexity, its conflicting and confusing role relationships between the injured worker and other parties, and by the worker's own fears and frustrations as a result of the life-changes subsequent to the injury. Following an extensive review of the research literature, Ekberg (1995) concluded that injured workers needed to have an influence on their own rehabilitation (or injury recovery) process in order to achieve a positive outcome.

Friesen et al. (2001) found that the verbalized experience of many injured workers was that they felt controlled by the "system"; they expressed that they did not feel "listened to". A worker-centred issue that was identified during the series of qualitative interviews with injured workers was an inability to negotiate systems. Workers' ability to negotiate their way through the healthcare, workplace, and insurance systems, in order to obtain the best options for their own recovery and RTW, was interpreted to mean having

a sense of empowerment and control over the RTW process (Friesen et al, 2001).

3.3 Workplace System Factors in RTW

3.3.1 Leadership style

Shannon et al. (1996, 1997, 2000) and Amick et al. (2000-a) identified a number of organizational factors in the workplace that contributed to the prevention of work injury. These included a style of management that was decentralized and promoted worker involvement in decision-making, commitment by senior-level managers to safety and injury prevention, an active joint labour-management health and safety committee, and an atmosphere of trust and "good faith". The effectiveness of joint management and labour committees in health and safety was evaluated by how much authority the committee had to make decisions and implement work safety strategies (Lewchuk et al., 1996; O'Grady, 2000; Shannon et al., 1996).

Union–management relationships are an important aspect of workplace dynamics that can be perceived as a barrier or a facilitator to RTW. Until recent years, unions have had somewhat limited involvement in RTW programs. However, Friesen et al. (2001) found that union support and involvement in RTW planning and implementation was reported by workers and managers to be an important factor in the success of RTW programming. It was recommended that unions should be involved to a greater degree in supporting injured workers and establishing modified work programs (Clarke et al., 2000; Friesen et al., 2001; Manitoba Labour Education Centre, 1995). An example of greater cooperation between unions and management in developing injury prevention and RTW programming may be found in recent efforts by OHSAH (2003) to develop their prevention and early intervention program. As well, NIDMAR (2004) is promoting

collaboration between unions and management in their educational and certification program for disability management.

Strunin and Boden, (2000) found that the RTW process was hindered by employers who were indifferent or even hostile towards workers who had sustained a back injury and were attempting to get back to work. Haldorsen et al. (1997) reported a positive change in attitude by supervisors who were given training on how to reintegrate employees with musculoskeletal pain; however, they did not indicate whether this had any effect on RTW.

3.3.2 Workplace culture and job demands

Shannon (2000) suggested that workplace organizational factors differed from job demand factors such as those measured by Karasek (1985), and that both were important to facilitating success in RTW. Having control in managing the demands of the job (Karasek & Theorell, 1990) had been cited as important both in preventing injury as well as in reducing the costs related to time-loss claims. Koehoorn (1999) found that healthcare workers who experienced increased job demands and yet had little support and little control in managing those demands were more likely to be injured or re-injured. These findings were consistent with recent studies which indicated that workplaces that had a strong "safety culture" also had a lower work incidence of injury (Manitoba Labour, 1996; Lewchuk et al., 1996; Shannon et al., 1997; Shannon, 2000).

The culture and climate of the workplace, defined as prevalent values, beliefs and perceptions of attributes about relationships in an organization, have been found to be important indicators of successful work integration for persons with psychiatric or other disabilities (Kirsh, 2000). Specific aspects of a workplace climate deemed to be most

important for work integration were support from supervisors and co-workers on the job and congruence between workplace and personal values. Bongers et al. (1993) reviewed studies that found an association between psychosocial stressors in the workplace and musculoskeletal disorders. They concluded that stressors at work, including monotonous work, time pressures and a perceived high workload, contributed to musculoskeletal complaints. Although there was no indication that these factors applied to workers who were in the process of RTW, it may be related to the general climate of the workplace that appeared to be important for success in RTW (Clarke et al., 2000, Stock et al., 1999). Westmorland, Zeytinoglu, Pringle, Denton and Chouinard, (1998) found that elements of the work environment important to workers with disabilities included positive attitudes, respect and communication among supervisors and co-workers. Young and Russell (1995) found that the type of school (i.e. workplace setting), with respect to its psychological demands, was an important factor in whether or not teachers returned to work. Heerwagen, Heubach, Montgomery and Weimer (1995) suggested that the physical work environment, if it was aesthetically pleasing, airy and light, was an important factor in reducing the stress of workers and facilitating productive work habits.

3.3.3 Ergonomics and injury prevention

Ergonomic adaptations to the worksite or to an injured worker's job design were found to be common elements of work rehabilitation programs (Jundt & King, 1999), and were cited as important in returning injured workers to work as well as preventing further injury (Norman & Wells, 2000). Ergonomic programs in the workplace have generally been found to be helpful in preventing injury (Moore & Garg, 1996) but have also been

found to be helpful in enabling workers with disabilities to re-enter the work force (King, 1994; Olson, 1999).

3.3.4 Active RTW programs

Also important in RTW were workplace factors such as the presence of an active RTW program (Clarke et al., 2000; Friesen et al., 2001) and a people-oriented work culture (Hunt et al., 1993). The importance of having a RTW program in place at the workplace and having opportunities for injured workers to participate in modified work was a recurring theme in much of the literature on upper-extremity soft tissue disorders as well as back injuries (Clarke et al., 2000; Helm et al., 1999; Hudak, Cole & Frank, 1998). Friesen et al. (2001) found that any workplace which offered modified work opportunities, regardless of the relevance of the modified work tasks to the person's own job tasks, reported greater success in RTW than companies which had no modified work opportunities. Krause et al., (1998), in a review of modified work programs, reported that workers who participated in modified work tended to return to their jobs more quickly. Shoemaker, Robin & Robin (1992) advocated the establishment of a workplace policy on early RTW that would require workplaces to provide modified work arrangements for workers who had sustained injury. Habeck et al. (1991) found that workers' compensation costs were significantly lower in workplaces that had policies and practices bearing on the prevention and management of work disability.

3.3.5 Communication and trust

In a qualitative study of barriers and facilitators in RTW, all stakeholder groups agreed that "positive relationships", "good communication" and "working together" were important to success in a RTW program (Clarke et al., 2000; Friesen et al., 2001). Both

structure (having a RTW program) and relationships (communication and trust) were perceived as vital in successful RTW, evidenced by workers returning to their jobs and by lower injury costs (Friesen et al., 2001).

3.4 Health Services System Factors in RTW

Friesen et al. (2001) and Clarke et al. (2000) were informed by stakeholder participants in a RTW qualitative study that treating physicians often were not informed about the injured worker's job demands nor about the employer's practices concerning modified work opportunities. Nonetheless, physicians were perceived to be important facilitators or barriers to the RTW process, depending on their willingness and availability to communicate with the employer, the insurer, and the injured worker. Occupational health professionals expressed frustration that family physicians were uninformed about the guidelines for treating injured workers and the benefits of early RTW strategies, and some were unwilling to share information about the injured worker's health status that would facilitate development of a modified work program (Clarke et al., 2000; Friesen et al., 2001). Frank et al. (1996, 1998) and Yassi et al. (2002) indicated that the worker's physician's approach to managing the injury at its onset was critical to the ultimate success of RTW.

Rehabilitation interventions for workers might be undertaken upon the advice of the worker's physician, insurer, employer, or might be initiated by the workers. Occasionally rehabilitation intervention services are offered at the workplace as part of the RTW process. This was especially true for any modified work programs that might be offered by the employer separately from other rehabilitation programs, as well as be organized as part of the overall rehabilitation plan for the worker (Shrey, 1996). Specific

rehabilitation interventions targeted to injured workers included programs for work conditioning and work hardening (King, 1993), specific strength training (Branch, 1998), and involvement in modified work (Helm et al., 1999; Krause et al., 1998). Many programs reported that approximately 50% or more of the participants returned to their jobs following the work rehabilitation programs (Niemeyer et al., 1994). Some centres offered programs that focused primarily on flexibility and strengthening (Branch, 1998; Karas & Conrad, 1996), while others offered a multi-disciplinary program which included education on injury prevention, physical conditioning, job simulation activities, pain management education, and personal counseling (Jundt & King, 1997; King, 1993; Niemeyer et al., 1994). Kenny (1994) reported that, on average, workers who had received rehabilitation interventions had less time off work than all other workers. Bendix, Labriola and Boekgaard (1998) also reported that individuals receiving functional restoration treatment reported a less disabled lifestyle following their injury and return to their jobs. Although not strictly part of the rehabilitation program, the security of knowing that employment was available to the injured workers was also important in facilitating early RTW and preventing further work disability (Merrill, 1997; Voaklander et al., 1995).

3.5 Insurance System Factors in RTW

Factors within the legislative or insurance systems such as complex rules and structures resulting in worker disempowerment have been found to be important to the worker's sense of being able to have a sense of control over their RTW process (Frankcom, 1992; Rest, 1996; Tate, 1992). Friesen et al. (1999) found that workers, physicians, and occupational health personnel reported frustration with insurance

companies when they were not given adequate information concerning the injury claim, benefits, potential RTW options, or when there were delays in processing or conveying information. Clarke et al. (2000) and Kenny (1995) reported that the complexity of the workers' compensation system was a source of potential problems related to inconsistency in claims adjudication, lack of understanding for workers who were really motivated to get back to work and delays in procedural requirements. However, when insurers were diligent in conveying information to the employer, the physician and the worker, they were perceived as facilitators in the RTW process (Clarke et al., 2000). The WCB of Manitoba reported that they were (and are currently) encouraging improved communication and active partnerships between workplaces and with the Workplace Safety and Health division in order to improve injury prevention strategies and to establish disability management programs in the workplace (WCB Manitoba, 1999-a, 1999-b).

Feyer et al. (1992), Frankcom (1992) and Kenny (1995) referred to the negative effects of the compensation system on workers, their families and on the rehabilitation process. This was variously cited as being due to the bureaucracy in the system, the loss of control experienced by claimants who were "in the system" or the insurer's policies that placed restrictions on the type of intervention approved for the injured worker. Kenny (1994), in a study of determinants of time lost from workplace injuries in Australia, found that workplaces which were self-insured tended to have a more integrated approach to injury management, and might also have a lower incidence of long-term disability claims. This finding, although not necessarily relevant to the administration of workers' compensation insurance systems in Canada, may have some

significance for workplaces that administrate their own long-term disability insurance plan.

A growing consensus was apparent among researchers and RTW personnel that successful RTW is influenced by multiple factors and systems (Feuerstein et al., 2000; Frank et al., 1998; Isernhagen, 2000), and requires coordinated efforts among all stakeholders in the medical, rehabilitation, insurance, and workplace systems. Although this consensus does not negate the importance of the worker in the RTW process, some authors suggested that there has been an over-emphasis on the need for change by the workers; it is now time for organizational systems to institute changes in attitudes and practices (Frankcom, 1992; Trief & Donelson, 1995).

3.6 Economic, Social and Legislative System Variables in Successful RTW

3.6.1 Social and economic variables

According to several stakeholders interviewed by Friesen et al. (2001), and the project coordinator of the *Workers with Disabilities Project* (Manitoba Labour Education Centre, 1995), economic conditions which resulted in downsizing the work force and eliminating job positions made it very difficult to offer injured workers modified work options or alternate jobs. This finding is somewhat disturbing to the future outlook for injured workers, especially when considered in light of the evidence that opportunities for modified work in the workplace were an important factor in the RTW process.

Gunderson and Hyatt (2000) analyzed trends of work injury incidence, workers' compensation assessment of the workplaces, and injury-related costs with the view of pointing out that the nature of major industry is changing from manual-labour-based such as logging, to technology and information-based industries. Their findings suggested that

the type of injuries occurring in technology jobs tended to be soft-tissue injuries, which were often less visible and more difficult to diagnose than the type of injuries in manual labour jobs. This, they predicted, would have major implications for costs and for the type of insurance coverage offered by workers' compensation agencies (Gunderson & Hyatt, 2000).

Family physicians in Manitoba usually are remunerated based on the number of patients they treat. Some physicians suggested that this might have the effect of physicians not having adequate time to spend with patients, potentially compromising the quality of care by not being able to attend to worker injury issues which fall into the realm of social or psychological intervention (Friesen et al., 2001). One solution that a number of workplaces have implemented is to hire occupational physicians on a contract basis to offer medical services to their employees (Friesen et al., 2001). Comments of occupational health professionals and the RTW team within the workplace, both physicians and nurses, expressed satisfaction with this arrangement in two areas. The on-site (workplace) RTW team expressed the benefits of having a physician easily accessible to the workers, and the physicians dealing with injured workers expressed the benefits of gaining greater understanding of workers' job demands and their relationship to workers' injury and disability.

3.6.2 Legislative variables

Human rights legislation that encourages job accommodation, federally and provincially, is a provision for workers with disabilities to obtain work or to return to work following an injury. The employer is required to implement adaptations for the

worker as long as they do not put the business in jeopardy or make the job unsafe (Human Rights Code, 1987).

In a discussion paper, Sass (1986), an occupational physician, commented that lack of worker rights to control work processes was a major contributor to increased number of injuries and argued that industry, as a whole, must be willing to cooperate in designing and implementing legislation which puts workers' safety and health ahead of production pressures.

A review of the current Manitoba Workplace Safety and Health Act (1987) indicated that both the worker and the employer have rights and responsibilities in ensuring work safety. The employer is responsible for providing a safe working environment. The worker is responsible to use all required safety equipment and observe the mandated safe work practices. The Act also highlighted the point that the chief occupational medical officer had rights to request that an employer offer alternative work to a worker when/if this person were capable of performing the essential elements of the job.

4.0 The Manitoba Experience of Work Injury and Return-to-Work

Although research information concerning work injury and RTW has been drawn from both national and international studies, some critical studies from Manitoba have confirmed that the factors related to work injury and to RTW in other centres are also applicable to workplaces in Manitoba. This holds true for the cost of work-related injuries and the high percentage of soft tissue injuries (WCB Manitoba 1998, 1999, 2000, 2001). As in other provinces, Manitoba healthcare workers experience higher than average injury incidence and time-loss (AWCBC, 1999; Manitoba Labour, 2001). Despite

evidence that ergonomic interventions and active RTW programs/disability management reduce the incidence and cost of work-related injury, the implementation of pro-active RTW programs continues to be sporadic (Brooker et al., 2000; Cousins, 2002; Yassi et al., 1995). Ergonomic interventions such as electric hi-lo beds and ceiling-track lift systems have been effective in reducing work injury incidence and costs among healthcare workers (Daynard et al., 2001; Ronald, Yassi, Spiegel, Tate & Mozel, 2002). However, lifting and transfer policies and ergonomic solutions have been applied in an inconsistent manner among WRHA healthcare facilities (Cousins, 2002). Again, despite the evidence that workplaces need to support injury prevention and provide opportunities for modified work and accommodation for injured workers, workers' attitudes and behaviours continue to be viewed by managers and insurers as major barriers in timely RTW (Friesen et al., 2001).

Intervention models and strategies proposed for successful RTW following workplace injury have included case management or disability management (Backer, 1986; Gardner, 1991; Tate et al., 1986), work hardening (Cooper, Tate, Yassi & Khokhar, 1996; Jundt & King, 1999; King, 1993), and workplace-based, multi-disciplinary strategies (Loisel et al., 1997; Yassi et al., 1995-b). Although the worker is depicted as the central figure in this RTW model, the involvement and commitment of the worker to the RTW process has received minimal attention in the research (Friesen et al., 2001; Kenny, 1995; Walker, 1992). Findings from studies by Friesen et al., Kenny (1995) and Walker (1992) showed that workers reported a sense of helplessness and disempowerment in the RTW process while workplaces continued to report high costs related to workplace injury.

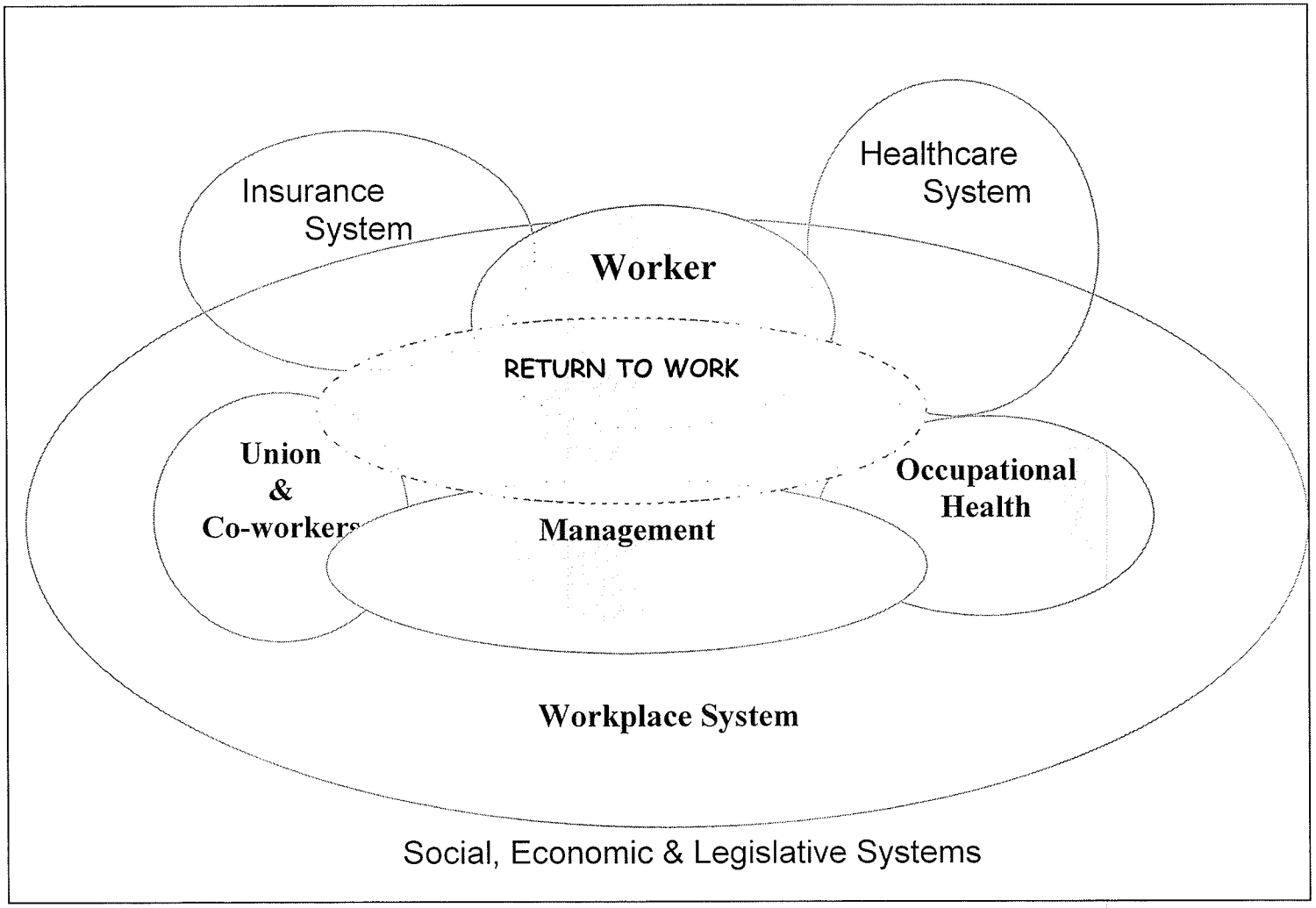
Although the need for worker participation has been addressed in health promotion programs such as smoking cessation (Sorenson et al., 1996), provision for worker participation in RTW does not appear to have received any attention. One of the gaps in the research is that the determinants of worker participation in the workplace have not been clarified; nor has any research been conducted that focuses on the need for, or the nature of, worker participation in the RTW process. It is suggested that determinants of worker participation in the workplace and in the RTW process need to be clarified so as to understand the importance of worker participation to the overall design and implementation of RTW programs.

5.0 A Multi-system Model of Worker Participation and Return-to-work in the Workplace

A theoretical multi-component RTW model was developed based on a summary of the facilitators in a successful RTW program found in the literature (Figure 3). This model depicts the importance of both systems and individual interactions in the process of RTW, the central role of the worker, and the central process being the RTW process of the injured worker. The RTW process involves key figures (or sub-systems) within the workplace system: the managers and/or supervisors, the occupational health team, the union (also representing co-workers). It also involves the healthcare system (outside the workplace system), which might include physicians, physical therapists, occupational therapists, massage therapists, psychotherapists, or alternative health practitioners as part of the healthcare team. As well, the insurance system (in this study, the Workers' Compensation Board) is closely involved with the worker and usually with the RTW process.

This model assumes that a network of cooperation and communication exists among all the major stakeholders involved in an injured worker's RTW process and program, both within the workplace and among the workplace, health, and insurance systems. When the injury occurs, this network becomes operational on behalf of the worker. The employer maintains contact with, and provides help and support to the worker, generally via the occupational health sub-system.

Figure 3 A Synthesis of Multi-system Models of Worker Participation and Return-to-work in the Workplace (developed by Friesen, 2001)



The union subsystem remains in communication with the manager or supervisor, the occupational health unit and the worker, in order to protect the worker's well-being and maintain the job position. The employer (manager or supervisor) also initiates or responds to communication and cooperates with the insurer and with the worker's primary care physician. The model depicts the worker as the central figure in all the communication and interventions, involved in all the planning and implementation of RTW. Although the coordinator, or case manager, of the RTW process in this interactive model is generally the employer via the occupational health unit, the model allows for the worker, the insurer, a healthcare practitioner, or even the worker's supervisor to function as the RTW coordinator.

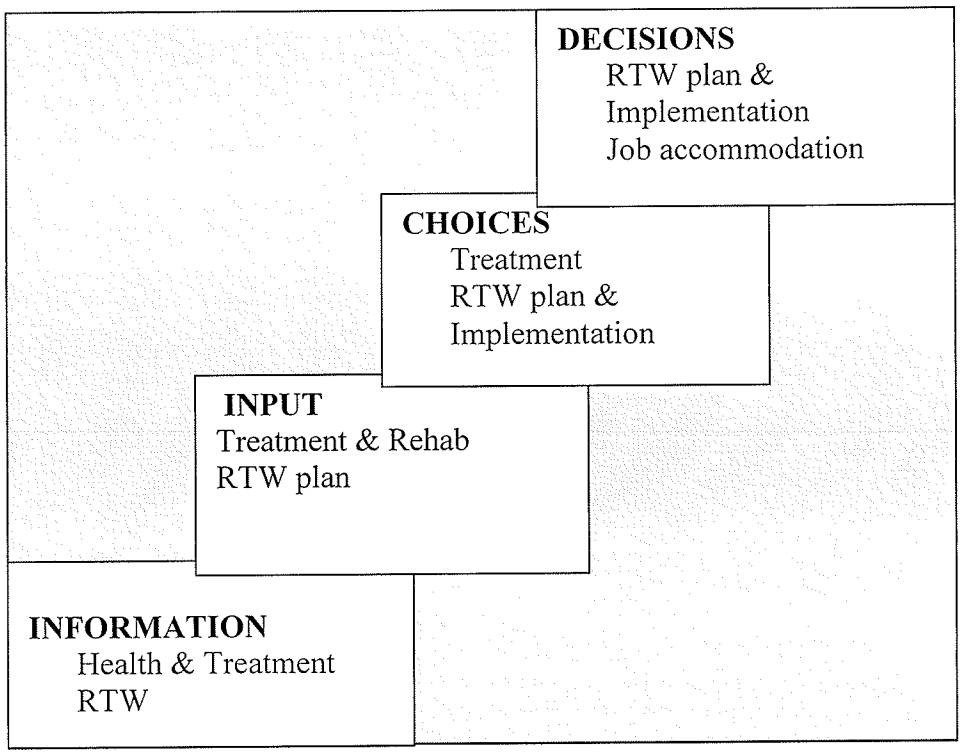
This theoretical depiction of worker participation in RTW assumes the worker's involvement in the organization's program of disability management including RTW. It is also based on the assumption that the organization has some type of RTW program or process in place. The RTW program may include ergonomic intervention, injury prevention education, or other safety and health programs and priorities. Based on previous research (Manitoba Labour–WSH, 1996) that found that workplaces with a positive safety culture have a lower injury rate, it is also suggested that workplaces with a positive safety culture would be more likely to have RTW programs in place and more likely to have a higher level of worker participation in the workplace and in the RTW program.

From this model it can be hypothesized that worker participation in the workplace is linked to the presence of a "participative workplace" culture and that duration of time-loss injuries can be influenced by worker participation in the workplace and by the

presence of the "participative workplace" culture.

A model of a worker participation in the RTW process was postulated as a series of steps in worker participation from receiving information through decision-making (Cormier, 1997; Rooney, 1988 & 1992) (Figure 4).

Figure 4 A Framework for Understanding Workers' Participation in Return-to-work (developed by Friesen, 2003)



In this model, obtaining information about workers' health (usually via the healthcare system) and about the process of RTW (usually through the workplace) represented the lowest level of worker participation. Opportunities for workers' input into the management of their physical or mental health and the management of their RTW process were the next level of participation. The input might take place through formal

means (i.e. a RTW coordinating team) or via informal means through conversations with personnel such as the physician, occupational health nurse, or supervisor. When the workers could exercise real choice in the design and implementation of the RTW plan via options presented by the employer and/or the insurer, a third level in participation has been attained. The choices given to the worker could apply to the timing or the type of rehabilitation intervention, or to the plan for and/or implementation of RTW. Decision-making was interpreted to include any aspect of planning and making decisions about the type of RTW program, its timing, ergonomic or other job accommodation needed by the worker, as well as the concept of input such that the worker's input was actually integrated into the outcome of the RTW process. Participation at the level of decision-making would assume participation in RTW at all other levels.

Finally, the model proposed that the entire process of RTW was embedded within the workplace and that workers' participation and involvement within the larger context of the workplace and, more specifically, within the process of RTW following a workplace injury, was important to facilitate successful RTW, thereby reducing the costs of workplace injury.

6.0 Purpose of the Research

6.1 Purpose

The overall purpose, therefore, of the research was:

a. To determine whether worker participation in the workplace is influenced by worker characteristics and/or workplace characteristics;

b. To determine whether worker participation in the workplace and workplace characteristics have an effect on the average duration of time-loss due to work

injury and/or on costs related to work injury insurance.

The specific objectives of the study were to:

1. Clarify the nature of worker participation in the workplace
2. Identify worker characteristics that are associated with worker participation
3. Identify workplace characteristics that are associated with worker participation
4. Identify underlying patterns in worker and workplace characteristics
5. Determine predictors of worker participation in workplace
6. Determine whether worker participation characteristics are associated with average duration of time-loss injuries
7. Determine whether workplace characteristics are associated with the cost of workers' compensation premiums.

6.2 The Research Hypotheses

1. H0: There is no relationship between worker characteristics and worker participation in the workplace.
2. H0: There is no relationship between workplace characteristics and worker participation in the workplace.
3. H0: There is no difference in worker participation in the workplace among three groups of employees based on their history of work-related injury.
4. H0: There is no difference in worker participation in the workplace among employees from three types of workplaces.

5a. H0: There is no difference in the average duration of time-loss injuries between the type of workplace (hospital, community/other, personal care home).

5b. H0: There is no difference in the cost of WCB premiums between the type of workplace (hospital, community/other, personal care home).

6a. H0: Worker participation in the workplace is not predictive of the average duration of time-loss injuries in the workplace.

6b. H0: Workplace characteristics are not predictive of the average duration of time-loss injuries in the workplace.

7a. H0: Worker participation in the workplace is not predictive of the cost of workers' compensation premiums.

7b. H0: Workplace characteristics are not predictive of the cost of workers' compensation premiums.

CHAPTER THREE METHODOLOGY

1.0 Research Design

1.1 Mixed Methods Design

One of the challenges in conducting research in RTW is to capture a realistic sense of the complexity of the issues involved in understanding the determinants of RTW outcomes. Krause, Frank, Dasinger, Sullivan and Sinclair (2001) recommended that one way to bridge the knowledge gaps in RTW research was to combine quantitative and qualitative methods. A mixed methods research design was employed for this study, using mail-in and telephone surveys to obtain a wide range of employees' and managers' opinions about workplace organization, and one-on-one qualitative interviews with workers in order to explore the meaning of worker participation in the RTW process. Two cross-sectional surveys were used for the study. A mail-in survey targeting workers was sent to a random sample of unionized employees working within healthcare facilities in the WRHA. A second survey using combined mail-in and/or telephone interviews were arranged with managers or occupational health coordinators in WRHA facilities. Both surveys were designed to capture a wide range of workplace characteristics and—in the employee survey—worker characteristics that had been cited in the literature as being important in RTW and/or in determining the impact of workplace injury.

The strength of using a mixed methods design enabled the researcher to obtain information from three different stakeholder groups: unionized employees and managers via surveys, and injured workers via one-on-one interviews.

1.2 Rationale for Use of Survey Method

Webster's Third New International Dictionary (Gove, 1981) defines *survey* as "a critical examination or inspection; the action of ascertaining facts regarding conditions or the condition of something to provide exact information; a systematic collection and analysis of data". Surveys are designed to generate statistics on the group or groups that the individuals represent while health survey questions are focused around factors that measure or influence health or are affected by people's health (Aday, 1996). Survey research, according to Rea and Parker (1997), is one of several means of collecting data that does not involve direct experimentation. A survey may be used to gather epidemiological data, evaluate a program, assess for health services needs, or to gather opinions or information on a particular issue (Abramson, 1997; Checkoway, Pearce & Crawford-Brown, 1989). Surveys may be administered by mail, telephone or via in-person interviews. Survey studies may be cross-sectional, capturing a fixed point in time of the issues under study, or if administered repeatedly over a longer period of time, may be used to collect data longitudinally (Checkoway et al., 1989; Hassard, 1991). According to Rea and Parker (1997) and Kelsey et al. (1986), cross-sectional studies are most often based on a sample of the general population, giving them a greater generalizability. Checkoway et al. (1989) pointed out that cross-sectional studies are also powerful because of their ability to measure a broad spectrum of health outcomes. A weakness of the cross-sectional study is the inability to study the impact of policies or the effects of change over time on the subjects or participants. Many of the survey studies reviewed in workplace research were cross-sectional, such as Lewchuk and Robertson's (1997) study of empowerment in a lean production motor vehicle manufacturing plant, in

which workers were questioned concerning organizational changes and their responses were measured against production figures. One example of a longitudinal study related to workplace issues was a study of the relationship of work organization factors and musculoskeletal symptoms and claims among a cohort of healthcare workers in British Columbia who were followed for a four-year period (Koehoorn, 1999). Because the goal of this study was to gather opinions and information on RTW, a cross-sectional design was used to generate a "snapshot" of the opinions of employees and managers within the WRHA.

Some workplace issues that were considered in designing the surveys for this study were the differing political and/or cultural perspectives represented by management personnel compared to front-line workers (Foster-Fishman & Keys, 1997; Frank et al., 1999; Friesen et al., 1999). Although the surveys targeted two "stakeholder groups" within the workplace (unionized employees and managers), it is acknowledged that differing viewpoints may be held by additional stakeholder groups within the workplace as well as outside the workplace. In RTW studies, the perspectives of outside stakeholders such as the insurance or healthcare systems need to be acknowledged, even though they were not directly included in this study (Foster-Fishman & Keys, 1997; Frank et al., 1995).

Gunderson and Hyatt (2000), in their analysis of the workforce and the workplace, pointed out the need for researchers to consider the broad societal and economic changes and their impact on the workers and the workplace. The authors referred especially to the changing nature of major industries from those that required intense manual labour, such as logging and fishing, to an increase in industries that are

more information and technology-oriented. These changes, they suggested, affected the nature of workplace injuries and possibly the compensation patterns since soft tissue injuries were "less visible" and could have been caused by multiple factors. Moreover, changes such as an aging workforce and increased ethnic diversity in the workplace would also have implications for changes in the type of work-related injury and incidence of work-related injuries (Gunderson & Hyatt, 2000). Since it was determined that the present study needed to be somewhat limited in scope (for economic and feasibility reasons), the researcher decided that stakeholders outside the workplace would not be included in the survey sample. However, a randomized sample of workers was determined to be the best means of ensuring that all unionized workers within the healthcare system would have an opportunity to be included in the study (Dillman, 1978). The facility/manager survey included all facilities within the WRHA.

1.3 Rationale for Use of Qualitative Methodology

Qualitative research methods are used to generate theories or hypotheses when little is known about a phenomenon (Creswell, 1998), when greater understanding or meaning is sought from the participant's point of view (Morse & Field, 1995), or when a better understanding of the context is needed (Maxwell, 1996). Qualitative methodology has been used extensively in studying topics such as the experience of illness or disability (Locker & Kaufert, 1988; Freedman & Fesko, 1996; Williams, 1984). Ethnographic (qualitative) studies have been employed to study the context of a cultural group or institutional norms, (Jelinek, Smircich & Hirsch, 1983; Krefting, 1989; Lysack & Krefting, 1994; Townsend, 1996). Although limited in number, some of the qualitative studies in RTW included studies of workers' experience of injury or disability (Tarasuk

& Eakin, 1993; 1994; Trief & Donelson, 1995), workers' feelings about returning to their jobs (Frankcom, 1992; Walker, 1992), and their fears of being re-injured (Eakin, 1992; Tarasuk & Eakin, 1994). A recent three-province study used a qualitative inquiry method to gain understanding from stakeholders on perceived barriers and facilitators in RTW (Frank et al., 1999). The findings from this study assisted in understanding the micro-system (i.e. worker-centred) factors in failure or success in RTW as well as the macro-system (i.e. economic and social systems) level of understanding that interventions for successful RTW needed to be both multi-disciplinary (i.e. strategies and treatments) and cohesive (cooperation, communication, and trust).

Creswell (1998) reviewed five major frameworks or traditions in qualitative research including biography, phenomenology, ethnography, grounded theory and case study. Although each of these traditions has elements to recommend it for research in the area of RTW, it is suggested that focused ethnography which examines the context as well as the worker's experience of the phenomena under study is the best means available to deepen our understanding of RTW and the worker's participation in that process.

Ethnographic study designs may be used in the analysis of organizational and cultural norms within the workplace (Jelinek et al., 1983). All ethnography is holistic, contextual, reflexive, and is presented from the emic perspective (Boyle, 1994). In the health sciences, a more delineated yet still context-bound ethnography has evolved, known as focused ethnography (Morse & Field, 1995). Although participants might not be linked by broad cultural norms, they nevertheless share common behaviours and a common language based on 'common illness', i.e. work-related injury. In focused ethnography, interviews were generally limited to the selected topic and surrounding

events (i.e. worker's participation in the RTW process). Description of the context in which the behaviour occurred was an important dimension, and in this study was primarily the workplace.

Worker participation in the RTW process is an unknown element, not described in the literature but assumed to be an integral component of a RTW plan (Sinclair, Sullivan et al., 1995). A qualitative approach for the injured worker interviews facilitated understanding of the experience of participation in RTW from the perspective of the workers. A clear understanding of the nature of worker participation in RTW is essential for evaluation and measurement of its presence and quality in RTW programs.

1.4 Participation Solicited in Design of Research

Punch (1994) emphasized the need for trust, collaboration and cooperation between the researcher and participants. He also stated that each researcher, together with the participants in each study, needed to decide what was public information, what was private, what aspect of knowledge was beneficial, what was superfluous, and what might be harmful. The researcher discussed all aspects of the research process and use of the data with stakeholders and participants. All union representatives as well as a number of occupational health professionals were contacted and invited to participate in the development of the survey questionnaires and in the sampling process. They were informed about, and agreed with, the purpose of the research and the potential use of the data in shaping future RTW programs within the WRHA. They were also informed about the cautions and guidelines that were followed to maintain confidentiality.

2.0 The Study Participants

2.1 The Sample Population

Checkoway et al. (1989) indicated that the goodness of a research design was highly dependent on the type of information being gathered. Since one of the objectives of this research was to gather information about the workplace and the participation of all workers in the workplace, whether or not they had experienced a work injury, the employee sample was drawn from all unionized employees. Another group likely to have information concerning workers' involvement in safety and health (within the organization) as well as the structure of a RTW program were managers, especially occupational health and safety managers. Therefore, the manager survey was targeted to facility managers or to occupational health and safety coordinators/professionals.

The unit of study in work-related injury and RTW survey research has been groups of individuals such as workers, union representatives, managers, supervisors, or occupational health professionals, and the workplace as an organization. Injured workers have been participants in numerous studies concerning epidemiology of work injury (Yassi et al., 1995-a), the efficacy of interventions such as work hardening, a program of physical conditioning with real and simulated work activities, in RTW (Johnson, Archer-Heese, Caron-Powles & Dowson, 2001), the incidence of work-injury and lost-time duration (Norman et al., 1998). The workplace itself has been a unit of study in examination of organizational factors related to workplace safety, ergonomic practices, and work injury (Amick et al., 2000-a; Habeck et al., 1998; Manitoba Labour Workplace Safety & Health, 1996; Norman et al.1998; Shannon et al., 1996), and workplace culture (Foster-Fishman & Keys, 1997). Some studies have focused on workers to examine the

relationship of job demands, job control, and the health of workers (Bongers et al., 1993; Johnson & Hall, 1988; Karasek & Theorell, 1981; 1990).

The units of this study included unionized employees within WRHA and managers representing a healthcare facility within the WRHA. It was hoped that the employee survey findings would generalize to other unionized healthcare workers and that the manager/facility survey findings could generalize to other healthcare facilities in other regional health authorities within Manitoba. The qualitative part of the study focused on workers within the WRHA who had experienced a time-loss workplace injury within the past two years.

2.1.1 Sampling strategy for employee survey

The first part of the study involved surveying unionized employees working within health care facilities in the WRHA. Nine unions had members working within health care facilities in Winnipeg that were part of the WRHA. Each union was invited be part of the development of questionnaires to be used in the study and to participate as respondents in the research survey. The total of potential participants from unionized workers was 19,330; this number was reduced to approximately 17,300 since one union elected not to participate in the study, and one union reported they would be able to access only a limited number of its members. Numbers were based on estimates given by the union to the researcher; some unions were uncertain of total numbers because they did not separate healthcare workers within WRHA from members who were healthcare workers in other regional health authorities in the province.

2.1.1.1 Calculation of sample size. The required sample size for the worker survey was calculated using the general guidelines for determining relationships among many

variables as described by Norman and Streiner (1999-a), i.e. that the sample size should be 5 to 10 times the number of variables expected to be used in the study. Approximately 35 to 38 variables (depending on the collation of responses to the survey questions) would be measured in the worker survey analyses; therefore the number of participants needed would vary from 190 to 380 (5x38 or10x38). As mail-in surveys are one of the least effective methods for soliciting responses, it was decided to plan for a low return rate of 30% (Portney & Watkins, 2000). In order to ensure an adequate response rate, it was decided to mail out 1200 surveys to potential participants: 30% = 300 responses.

Aday (1996) recommended another method for determining the sample size for descriptive studies in which the standard error expected for each variable under study is estimated, deciding on the desired level of confidence (i.e. $p \leq .05$) as well as the tolerable range of error; the sample size is then computed based on these study assumptions. For an exploratory descriptive study, Aday (1996) recommended that proportions be used to estimate the greatest possible variation (i.e. .50/.50) and the sample size be calculated based on the desired precision or level of confidence, i.e. $p \leq .05$, resulting in the largest sample size requirements. In this case the formula would be:

$$N = z^2_{1-\alpha/2} P(1-P) / d^2,$$

$$N = 1.96^2 \times (.50)(.50) / (.05)^2 = \underline{384}$$ is the estimated required sample size

["N" is the sample size, "z" is the standardized normal deviate, "P" is the estimated proportion of the population, and "d" is the desired precision]

In order to meet this criterion (n=384), a response rate of at least 32% would be needed from a mail-out of 1200 surveys. As this was within the higher range of the "hoped-for" number of responses, it was determined that a size of 1200 for the employee sample would be adequate.

2.1.1.2 Number of mail-out surveys per union. The estimated number of employees within the WRHA was 27,000 (WRHA, 1999); the number of unionized employees, based on estimates made by the unions, totaled 19,333. When one union withdrew their participation and one union reported a smaller accessible number of members, this number decreased to 17,300, an estimated 64% of the total number of employees in WRHA. The number of mailings for each union was calculated by estimating the total number of members within each union that worked within WRHA, calculating the percentage they represented of the total number of unionized WRHA employees, and then selecting that same percentage to be represented in the sample total (Table 1).

Table 1 Unionized Members Sample

Union	Estimated Number of Members Employed by WRHA	Number of Surveys Sent Out
Manitoba Government Employees Union (MGEU)	3500	245
Canadian Union of Public Employees (CUPE)	4000	290
Union of Food and Commercial Workers (UFCW)	1800	125
Manitoba Association of Health Care Professionals (MAHCP)	1300	92
Manitoba Nurses Union	6000	420
Professional Institute of Public Service Commission (PIPSC)	213	16
Public Services Association Commission (PSAC)	500	34
Canadian Auto Workers (CAW)	60	6
TOTAL	**17,373**	**1228**

Individual members within each union were selected by randomly selecting a number between 1 and the number of individuals needed from that particular union (k). Every k^{th} name following the first name was selected until the required total number was

reached. The value for "*k*" was determined by dividing the number of WRHA healthcare members within the union by the number of participants needed from each union.

For example:
WRHA has 17300 unionized employees
MGEU has 3500 employees within WRHA
Overall sample size needed: 1200
3500 ÷ 17300 = 20.2%;
20.2% of 1200 = 242
k = 3500 ÷ 242 = 14

Stuffing envelopes was completed by volunteers while attaching mailing labels was completed at each union office, sometimes by the union staff and sometimes by the researcher. In most instances the union staff did the actual selection of participants together with the researcher since they expressed concerns about privacy and confidentiality that the researcher should not have access to the complete mailing list. In at least three instances, the stuffed envelopes were left with a union staff person who was instructed (by the researcher) how to make a random selection of names and who then physically attached the mailing labels. Again, this was done because of the union's concerns about the privacy of the list of unionized members. The actual total of surveys mailed out varied slightly from the planned total; actual total was 1228. Two sets of reminder postcards were mailed for follow-up. Ninety-three surveys were returned to sender either because the address had changed or the address labels had become removed; leaving a total of 1135 successfully mailed.

2.1.2 Sampling strategy for the manager survey

All workplaces within the WRHA with 20 or more employees were included in the manager-facility surveys. Twenty employees was chosen as a cut-off point because provincial legislation requires that workplaces with 20 or more employees must have a

joint management-labour health and safety committee and must have a safety program in the workplace (Manitoba Workplace Safety & Health Act, 1987). It was expected that these workplaces would be more likely to have arrangements for RTW programs than the very small workplaces that had fewer than 20 employees. Workplaces included community agencies, personal care homes and hospitals. This involved a potential of 133 facilities named in an initial list obtained in September 2000. This number was reduced to 67 when double entries, private facilities that chose not to participate, and those with fewer than 20 employees were eliminated, and when facilities from different sites were combined under one administration. Managers, human resource managers, or occupational health personnel of participating facilities responded on behalf of the facility.

2.1.3 Sampling strategy for the qualitative interviews

The target population for the one-on-one interviews was unionized employees of facilities within the Winnipeg Regional Health Authority who had sustained a work-related injury or acquired a work-related disabling condition within the past 24 months, resulting in at least three weeks of time lost from work. Workers were selected who were in the process of recovery and RTW, or had completed the process of RTW. Recovery and return-to-work processes for the purpose of this study included any form of medical or rehabilitation intervention, disability management or RTW programs within the workplace, or any other intervention process that had RTW as a goal for the worker.

2.1.4 Exclusion criteria

One union chose not to participate in the study; its workers were not included in the listing for sample selection for the employee survey. Non-unionized workers were not

included in the sample selection; this excluded many supervisory and managerial staff from the employee survey.

Workplaces that had fewer than 20 employees were excluded from the study for the manager-facility survey. Workplaces that were privately owned and operated (versus being funded or administered by the WRHA) were given an option to participate; only one chose to do so. Some healthcare organizations had more than one facility under common management (i.e. a personal care home and a seniors' housing unit) and in most cases the manager chose to respond on behalf of all sites in a single questionnaire response.

For the qualitative part of the study that involved interviewing injured workers, those workers who had been away from their jobs for less than three weeks, those who had a life threatening or terminal illness (by self-report), or those who had no prospects of returning to work (by self-report), were excluded from the study. Participants were purposefully selected for their ability to provide the best possible information in response to the research question, which focused on worker participation in the RTW process (Creswell, 1994). Union representatives, occupational health personnel and other human resource personnel were asked to inform potential participants about the study and offer the workers a one-page description of the study with the researcher's phone number. A poster advertisement was drawn up and given or sent to participating WRHA facilities and sent to the union newsletters.

3.0 Instrumentation

3.1 Questionnaire Development for Employee Survey

Labaw (1981) pointed out the need to be clear about the underlying values or beliefs inherent in each question of a survey. Content experts, i.e. occupational health professionals and union representatives, were used to confirm that questions in the employee survey were relevant to the topic being studied and that the questions were actually addressing the construct being measured (Babbie, 1986; Woodward, Chambers & Smith, 1982).

As recommended by Dillman (1978), questions in the survey were designed based on the type of information being sought, the structure of the question, and the actual choice of words and sentence structure. The purpose of the survey as well as the confidentiality provisions were explained in a cover letter and in the information consent form (Woodward & Chambers, 1983). As the survey was administered by mail and visual presentation is important for readability, the format of the questions was clearly laid out with the question appearing on the left side of the page and the response categories being placed either below the question or on the right side of the page (Labaw, 1981). As recommended by Dillman (1978), the questions were formed with the purpose clearly identified as requesting demographic information, attitudes or beliefs and opinions concerning the workplace culture and environment. Questions were generally close-ended with ordered responses or discrete categories as responses. Careful attention was given to details such as the use of plain language, clear, unambiguous and succinct sentences, and non-discriminatory language (Woodward & Chambers, 1983).

3.2. Pre-testing of the Employee Survey

Pilot studies or pre-testing a survey is an important means of evaluating questions and is also one of the best means to evaluate the overall direction of the survey (Aday &

Kasper, 1989; Fowler, 1989). Pilot work on the survey questionnaire should include the review of questions by occupational health experts, researchers skilled in survey methodology, and by individuals who are deemed to have a similar demographic to potential respondents (Fowler, 1989; Oppenheim, 1966).

All nine unions were invited to participate in the development of the survey by reviewing a draft questionnaire. Five unions gave feedback on the questionnaires. The wording of some questions was changed in response to the feedback. One set of questions was deleted since it specifically addressed workers who had been recently injured and this sample was to include a broad representation of workers, including non-injured as well as injured. After the questionnaire was refined, union representatives met with the researcher to review the survey and the information consent form. At this time, the union representatives expressed their concern about confidentiality and asked that no identifiers be placed on the survey form. Both employee and manager survey questionnaires were completed and evaluated by several occupational health experts. Both occupational health experts and union representatives evaluated the employee questionnaire. Members of the researcher's advisory committee reviewed both questionnaires.

3.3 Selection of Survey Questions

A broad range of questions was used in the survey to gather information about the worker and the workplace. Questions were designed to collect demographic information about the workers: age, gender, occupation, years of experience, salary range, educational level, type of injury (if any), time away from the job due to injury, type of treatment received, type and size of workplace.

Three questionnaires were used in the employee survey to assist in identifying worker variables and organizational variables related to workplace health and safety, ergonomics, managing work injuries, and overall workplace culture. The General Perceived Self-Efficacy Scale was used as a measure of belief in one's ability to manage tasks and circumstances. The Organizational Policies and Programs Questionnaire for Employees (OPP-E) was used to measure eight domains of workplace health and safety and management of injured workers. The OPP-E was taken from Amick et al.'s (2000) adaptation of this questionnaire from the original Michigan questionnaire for employers on organizational policies and programs (Habeck et al., 1991). Items in the Work Environment Scale (WES) measured three domains of the work environment including interpersonal relations, personal growth or goal orientation, and organizational structure of the work setting (Moos, 1986, 1994; Moos & Insel, 1994).

3.3.1 The General Perceived Self-Efficacy Scale (Appendix II)

The General Perceived Self-Efficacy Scale (Schwarzer, 2001) was used to measure self-efficacy, a worker characteristic that is suggested to be a contributor to a worker's ability and motivation to participate, either in the work organization or in a RTW program (Mitchell et al., 1990). The German version of the General Self-Efficacy Scale was originally developed by Jerusalem and Schwarzer in 1981 as a 20-item scale and subsequently reduced to a 10-item scale (Jerusalem & Schwarzer, 1992). The scale was shown to be reliable; internal consistencies generally fell between Cronbach's alpha = .75 and .91 suggesting that the items were highly correlated with one another, that is, measuring the same construct (Schwarzer, 2001). Factor analyses were computed for 13 different language versions and found that one component accounted for half the variance

while a second component accounted for only 8% of the variance. This supported the unidimensionality of the scale (Schwarzer, 2001).

Discriminant validity of the scale was assessed through administration to 13 different language groups based on the assumption that cultural or language groups would exhibit some differences in self-efficacy. It appeared to discriminate between groups on all ten items with Item five ("Thanks to my resourcefulness, I know how to handle unforeseen situations") having the highest power to separate groups (Schwarzer, 2001; 1992; Schwarzer & Jerusalem, 1995).

3.3.2 The Work Environment Scale (Appendix III)

In the Work Environment Scale 3rd edition (WES) (Moos, 1994; Moos & Insel, 1994), ten themes or subscales measure workers' perception of the overall work climate and organizational system, whether workers feel supported, and whether teamwork and worker input are valued, all of which are considered to be aspects that facilitate worker participation (Shannon et al., 1996; Moos, 1994). The ten subscales assess three underlying sets of dimensions: relationship dimensions (involvement, peer cohesion and supervisor support), personal growth or goal orientation dimensions (autonomy, task orientation and work pressure), and system maintenance and change dimensions (clarity, managerial control, innovation, and physical comfort). The ten themes are described below:

- Involvement – the extent to which employees are concerned about and committed to their jobs
- Peer cohesion – how much employees are friendly and supportive of one another
- Supervisor Support – the extent to which management is supportive of employees and encourages employees to be supportive of one another

- Autonomy – how much employees are encouraged to be self-sufficient and to make their own decisions
- Task orientation – the emphasis on good planning, efficiency, and getting the job done
- Work Pressure – the degree to which high work demands and time pressure dominate the job milieu
- Clarity – whether employees know what to expect in their daily routine and how explicitly rules and policies are communicated
- Managerial Control – how much management uses rules and procedures to keep employees under control
- Innovation – the emphasis on variety, change, and new approaches
- Physical Comfort – the extent to which the physical surroundings contribute to a pleasant work environment.

Three of the above themes were deemed to depict most clearly the evidence of worker participation and were used as a measure of worker participation in the workplace: involvement, peer cohesion, and autonomy. According to Moos and Insel (1994), participation in decision-making is associated with involvement and peer cohesion. Participative leadership behaviour also tended to be associated with involvement, and peer cohesion (Moos & Insel, 1994).

Internal consistencies (Cronbach's alpha) for each of the ten subscales ranged from .66 to .84 in a sample of nurses (Constable, 1984) and from .60 to .84 in a sample of teachers (Fisher & Fraser, 1983). The inter-correlations indicated that the subscales measured distinct though somewhat related aspects of work environments. Test-retest reliability of individuals' scores on the ten subscales for a group of 75 employees, with one-month intervals between administrations, ranged from a low score of .69 for clarity to a high of .83 for involvement. Moreover, although the profiles proved to be stable over

intervals of as much as one year, they also reflected changes that occurred in the work environment.

The conceptual model on which the WES scale is based posited that work stressors as well as the organizational and personal factors that foreshadowed them would shape coping responses and employee outcomes. In turn, employees' work morale and performance would affect organizational outcomes such as the quality of service and client care. The WES has been used to compare the social climates of subgroups of employees in healthcare settings. Starker (1989) found that work climates varied considerably in different divisions of a hospital. Acute inpatient units had high work demands while intermediate and long-term care units had lower work demands. A small outpatient clinic was perceived to be the most positive work environment with high scores in involvement, cohesion, support and clarity.

The model has also been validated through its use in a wide variety of settings and with many occupational groups to determine whether a relationship exists between perceptions of work environment and work disability or stress. Workers with chronic pain and work disability assessed their work environment as lower in peer cohesion, supervisor support and autonomy while being higher in work pressure and supervisor control than workers with chronic pain who continued working (Feuerstein & Thebarge, 1991). Schaefer and Moos (1996), in a study of the effects of work stressors on staff morale and functioning in a long-term care setting, found that work environments that exhibited more relationship stressors (i.e. lower scores in involvement, peer cohesion and supervisor support) and a demanding workload predicted poorer functioning among staff.

3.3.4 The Organizational Policies and Practices Questionnaire (Appendix IV)

The Organizational Policies And Practices Questionnaire for employers (OPP-M), developed by Hunt et al. (1993), and the modified questionnaire for employees (OPP-E) developed by Amick et al. (2000-a) were selected for inclusion in this study for their specificity in measuring aspects of workplace organization and work culture that were hypothesized to have a bearing both on worker involvement and on successful RTW. According to Habeck et al. (1991, 1998), Hunt et al. (1993) and Amick et al. (2000-a), the organizational factors that were relevant to the successful disability prevention and disability management (i.e. RTW) of people with workplace injury or illness included:

- People-oriented culture (POC) – the extent to which the company involved employees in meaningful decision-making, trust between management and employees, openness to share information, and a cooperative work environment
- Active safety leadership (ASL) – the extent to which upper management was committed to and participated in safety issues; commitment of resources and time to promotion of safety, and a balance of emphasis in production with health and safety
- Safety diligence (SD) – actual safety practices including maintenance of a safe work environment and taking action to redress safety issues
- Safety training (ST) – for workers that was offered regularly and in a timely manner
- Pro-active RTW program (RTW) – follow-up with injured workers and assistance to RTW
- Ergonomic practices (Erg) – implementation of practices to reduce biomechanical stressors such as heavy lifting or repetitive motions and early intervention
- Disability case monitoring (DCM) – included case management for workers with injury or illness as well as proactive return to work practices such as opportunity for modified work

- Labour management climate (LaM) – the degree to which labour and management cooperated in health and safety practice and in return to work.

Hunt et al. (1993) first established validity for the eight subsets in the questionnaire in a large study of disability prevention among Michigan employers that involved a survey of 517 workplaces and site visits for 32 workplaces. Using multivariate analysis, safety diligence and safety training were shown to be associated with a reduction in lost workdays. Ergonomics, while not significant in relationship to the number of lost workdays, appeared to relate to a human resource orientation (Habeck et al., 1998). Disability case monitoring appeared to be significant in an environment that practiced pro-active RTW programs. Both people-oriented culture and active safety leadership, although linked to each other, were associated with fewer lost workdays and were argued to be measuring differing aspects of leadership that facilitated the reduction in lost workdays. Hunt et al. (1993) concluded that at least three aspects of successful disability prevention--sharing information, involvement of employees, and establishing partnerships--supported the concept that greater worker involvement in the workplace resulted in successful RTW and disability management in the workplace.

Habeck et al. (1998) reported that the qualitative findings of the study by Hunt et al., (1993) supported the premise that organizational policies and practices of safety diligence, safety training and proactive RTW programs had a substantial impact on lost workdays and workers' compensation claim costs. Factor analysis of independent variables was conducted to validate the theoretical basis of the questionnaire. This resulted in an eight-factor solution that was subsequently analyzed for internal consistency. Results ranged from Cronbach's alpha = .72 for safety training to .96 for people oriented culture (Habeck et al., 1998).

Amick et al. (2000-a) refined the OPP questionnaire to create a short-form for use with workers, by reducing the number of items for each theme. The resultant 22-item questionnaire was used with 198 employees who had carpal tunnel syndrome. This abbreviated questionnaire was selected for the employee survey because of its focus on the employee perspective and its brevity. Amick et al. (2000-a) examined the abbreviated questionnaire for internal consistency and test-retest reliability, as well as discriminant and predictive validity. Rotated factor analysis of the Michigan questionnaire (the long version of the OPP) was examined using a cut-off point of .5 for loading on a factor. Item-to-scale correlation was also re-examined and items below a correlation of .6 were eliminated. The questionnaire was then re-examined to ensure that all key elements of a domain were included. The final questionnaire was piloted in three focus groups and further reviewed by experts; this resulted in a questionnaire of eight dimensions and a total of 22 items. Factor analysis with both orthogonal and oblique rotation suggested a four-factor solution of safety climate, people-oriented culture, ergonomics, and disability management. Internal consistency was determined to be acceptable with a Cronbach's alpha of .7. Test-retest reliability over a two-week period was established at .7. The predictive value of the four-factor scale showed that "the higher the value of each OPP scale, the greater the odds an injured worker had returned to work" (Amick et al., 2000-a, p.34).

3.3.5 Adaptation of instruments for current study

Since both instruments (OPP and WES) were developed for an American work setting, some adaptations to the questions were necessary. In healthcare workplaces in Manitoba, most workers belong to a union; joint labour-management health and safety

committees are mandated by legislation in all workplaces with 20 or more employees, and public healthcare services are available for workers for non-work-related illnesses or injuries. This means that there is, at minimum, a formal structure for monitoring safety and health in workplaces, and that most employees will have access to a range of employee benefits including retirement pension, sick leave, parental leave, and long-term disability benefits. The wording in several questions was changed to reflect the existence of a joint labour-management health and safety committee. As well, the questions concerning benefits were grouped to reflect the benefits generally available by collective agreement, i.e. sick leave, parental leave, and retirement pension.

3.4 Questionnaire Development for Manager Survey

As recommended by Dillman (1978), questions in the manager survey were designed with attention to details such as the structure of the question, the choice of words and sentence structure, and the purpose of the question. The content of questions in the manager survey was reviewed by clinical and by research occupational health professionals.

The purpose of the survey as well as the confidentiality provisions were explained in a preliminary telephone call and in a subsequent cover letter and information consent form (Woodward & Chambers, 1983). All surveys were mailed out for information; they included a cover letter that explained the purpose of the survey, the confidentiality provisions, and an information consent form.

Questions regarding the workplace occupational health and safety practices, labour-management cooperation and RTW programs for injured workers were based on the Organizational Policies and Programs questionnaire (OPP-M) as developed by Hunt

et al. (1993). As per the OPP-E, the questionnaire consisted of eight themes or sub-sections including:

- People-oriented culture (POC) – the extent to which the company involved employees in meaningful decision-making, trust between management and employees, openness to share information, and a cooperative work environment
- Active safety leadership (ASL) – the extent to which upper management was committed to and participated in safety issues; commitment of resources and time to promotion of safety, and a balance of emphasis in production with health and safety
- Safety diligence (SD) – actual safety practices including maintenance of a safe work environment and taking action to redress safety issues
- Safety training (ST) – for workers that was offered regularly and in a timely manner
- Pro-active RTW program (RTW) –follow-up with injured workers and assistance to RTW
- Ergonomic practices (Erg)– implementation of practices to reduce biomechanical stressors such as heavy lifting or repetitive motions and early intervention
- Disability case monitoring (DCM) – included case management for workers with injury or illness as well as proactive return to work practices such as opportunity for modified work
- Labour management climate (LaM)– the degree to which labour and management cooperated in health and safety practice and in return to work.

Also modeled on the questionnaire for employers (Hunt et al., 1993), questions were included that described the workplace: employee numbers (full-time and part-time), unionization, employee benefits, and the nature of the relationship with WCB. Questions were also included to obtain information about work-related injury incidence, duration of time-loss injuries and workers' compensation premium rates. Average duration of time loss (in days) was obtained from the workplace (when possible) and from Manitoba Labour Workplace Safety and Health (2001) when not available from the workplace. The average duration of time-loss due to workplace injury was determined by dividing the

total number of time-loss days per year by the number of time-loss injuries for that year (Manitoba Workplace Health and Safety, 2001).

A copy of the complete questionnaire for employees and the questionnaire for managers may be found in Appendix I.

3.5 Qualitative Interview Questions

In part three of the study open-ended interview questions were used to elicit a full description of injured workers' experience of participation in the recovery and RTW process. The key questions were phrased in a variety of ways to elicit the greatest detail and "thick" description of the workers' experiences, i.e. "Tell me about your recovery from your injury, any treatment and rehabilitation you had, and the process of getting back to work or trying to get back to your job." Probing questions would be used to elicit more detail concerning the worker's own involvement and participation in the recovery and RTW process, and having opportunities to exercise choice and be involved in the decision-making process. These questions sought more detail: "Did you get enough information about your injury/condition? How did you get the information? Did you have any other therapy or treatments? Was this offered to you or did you ask for it? How did you find out about the RTW program? Were you given any choice about participating? Did you/do you have enough information about the program to know whether it would be suitable for you? Did you have any options for how you could arrange your RTW? Were you part of the planning process? Was your supervisor part of the plan? Were you able to express what you thought you needed? Did the RTW program work out in the way it was planned? What happened?" Probing questions were used to draw out the participants' experiences of participation, i.e. having input into the RTW plan and process. All the

interviews were audio-taped and transcribed verbatim.

4.0 Survey Administration

4.1 Use of Mail-in and Telephone Surveys

Administration of the employee and the manager surveys was dependent on a number of variables such as the financial resources available, the type of information being sought, the size of the sample and the geographic location of the participants. It was determined that the WRHA was a "contained" geographic area and had healthcare facilities in at least three major sectors—hospitals, personal care homes and long-term care centers, and community agencies. Mail questionnaires are generally considered a more economical method than in-person or telephone surveys by which to administer a survey to a large sample of more than one thousand respondents (Woodward & Chambers, 1983). However, one of the major disadvantages in conducting mail-in surveys is that response rates tend to be lower than in either telephone or face-to-face surveys. As well, the researcher has no indication of the reasons for non-response and has to acknowledge the inherent potential bias if there is a low response rate (Rea & Parker, 1997).

Telephone surveys generally are deemed more economical than conducting face-to-face interviews; they result in higher response rates and the reasons for non-participation are generally available to the researcher (Woodward & Chambers, 1983). A disadvantage is that some questions may be avoided because they require extra effort to complete (Woodward & Chambers, 1983). Another problem is similar to that of mail-in surveys: telephone calls are not returned, regardless of the number of repeated calls made by the researcher, resulting in potential non-response bias.

In this study, it was determined that a cross-sectional survey administered by mail was the most feasible option for the employee survey (considering cost restrictions). Mail, fax, and telephone calls were used to complete the manager surveys.

In a survey, a low response rate affects the generalizability of the research findings. As recommended by Dillman (1978) and Woodward, Chambers and Smith (1982), more than one means was used to follow-up the initial mail-out of the survey. For the employee survey, two sets of follow-up postcards and an announcement in all the union newsletters were used to encourage participant response. Each set of postcards was printed in different coloured font; the postcards and the newsletter announcement expressed thanks for involvement, and encouraged those who had not responded to do so. An extended target date was added, together with a statement that all workers were eligible to participate, that the study was not limited to injured workers (Babbie, 1986; Dillman, 1978; Sudman & Bradburn, 1982; Woodward et al., 1982). The latter statement was added because there seemed to be some indication in the telephone calls received by the researcher that potential respondents understood that only injured workers were the target group.

For reasons of confidentiality all unions required that the mailing labels remain within their offices. Therefore the researcher met with a union staff member to select the sample and print out mailing labels. These labels were attached to the envelopes and mailed directly from the union offices. Two unions added a cover letter to the survey mail-out. One sample set of surveys was mailed approximately one month later than the majority due to difficulty in coordinating schedules between the researcher and the union

representative. The first set of reminder post cards was mailed two to three weeks after the initial mailing and the second set of reminders another two to three weeks later.

Conducting face-to-face interviews has a number of significant advantages such as the interviewer being able to be flexible in asking questions so that any ambiguity may be clarified and more complete answers are likely (Dillman, 1978). One of the greatest disadvantages for conducting face-to-face interviews is the expense and time involved in data collection (Woodward et al., 1982). The qualitative portion of this study was administered via face-to-face interviews since it involved a smaller number of participants (n = 6).

4.2 Managing Non-Respondent or Missing Data

Questionnaires that were returned but were missing responses were generally not eliminated from the study analysis; rather, they were managed in such a way that preserved the available data but still respected the rigour of the statistical analysis (Checkoway et al., 1989). Only one questionnaire was eliminated since the respondent had left nearly all questions unanswered. In some cases when quantitative data was being collected, it was possible to replace missing data (such as age of participant) by using the mean of its companion values taken from other participants in the sample (Hassard, 1991). Omitted items on the three scales within the questionnaire were either eliminated from the analysis or were assigned a value of "0" (Babbie, 1986). An accurate analysis of non-response was not possible since the questionnaires had not been identified such that a comparison of the respondent group could be made with the overall sample. Instead, the respondent group was compared with employees from one community agency and from one hospital in order to determine how representative the respondent group was of other

groups of employees within the WRHA. A limited comparison was possible on a number of demographic variables: age, gender, job title, salary, and educational level.

4.3 Data Collection in Qualitative Research

Techniques for data collection included audio-taped interviews, and observations recorded as field notes. Sampling was purposive and the researcher acknowledged the possibility of differing political realities among participants by actively recruiting through referrals from managers, union representatives, and through poster advertisements (Punch, 1994). Participants were included if they had experienced a work-related injury with time-loss of three weeks or longer within the previous two years.

The questions in the qualitative interviews that examined the nature of worker participation were based on description of the workers' involvement in workplace decisions, receiving information, having input into workplace decisions and policies, and/or involvement in joint labour-management activities (Bernstein, 1976; Cormier, 1997). Questions also probed the workers' level of commitment to become involved in the workplace (Foster-Fishman & Keys, 1997) opportunities for participation, ability to exert influence (Tomer, 1988) and the organizational level at which they were able to exercise control (Bernstein, 1976).

5.0 Description of Dependent and Independent Variables

5.1. Dependent Variables in Employee Survey

The nature of worker participation in the workplace (for analysis of employee data) was described based on analysis of five variables that reflected the concept of worker involvement in the workplace organization: safety training, labour-management cooperation, involvement, peer cohesion, and autonomy. The variables selected to

identify the construct of worker participation were taken from two scales selected for inclusion in the survey, the OPP-E and the WES. From the description of these variables as presented in the test manual (Moos, 1994) and in the literature (Amick et al., 2000-a; Hunt et al., 1993), it was determined that these variables most clearly represented a workers' commitment to the job or workplace, participation in workplace activities, and initiative by workers to be involved with their co-workers.

5.2. Independent Variables in the Employee Survey

5.2.1 Worker variables

The employee survey included questions regarding gender, age, marital and family status, type of job, years of work experience (in occupation and in current job), salary range, educational level, and history of work-related injury. All the above-mentioned variables have been demonstrated to be associated with workplace injury incidence and duration of time-loss resulting from an injury (McIntosh et al., 2000; Tate, 1992; Baldwin et al., 1996). See Table 2.1 for a summary of variables. A score of general perceived self-efficacy was also included as a worker variable.

5.2.2 Workplace variables

In order to identify and describe workplace variables that were relevant to RTW and/or to worker participation, the researcher selected two measurement scales (OPP-E and WES) and other associated variables that described the workplace culture or climate. The rationale for selection of these variables was based on literature that described variables related to increased worker participation, or to decreased costs of work-related injury. These variables included a variety of safety measures, ergonomic, RTW, and disability case monitoring, a milieu in which workers were encouraged to take initiative

and where workers felt supported by supervisors, and where trust and communication were evident (Foster-Fishman & Keys, 1997; Shannon et al., 1996; Sorenson, Stoddard, Ockene, Hunt & Younstrom, 1996; Wallerstein & Weinger, 1992; Wands & Yassi, 1992). Other variables included the role of upper management in health and safety (Sinclair et al., 1995; Manitoba Workplace Safety & Health & Workers Compensation Board, 1996), active commitment by upper management to work injury management and RTW (Amick et al., 2000-a; Friesen et al, 2001; Habeck et al., 1998), effective communication pathways within the workplace (Friesen et al., 2001), attitudes of supervisors and co-workers towards injured workers (Clarke et al., 2000; Friesen, et al., 2001; MB-WSH & WCB Manitoba, 1996). The presence and activity level of joint workplace health and safety committees was also identified as having an impact on workplace safety and worker participation (Habeck et al., 1991, 1998; Hunt et al., 1993; Shannon et al., 1997; Lewchuk & Robertson, 1997). See Tables 2.1 and 2.2 for a summary of variables.

5.3 Dependent Variables in Manager Survey

The average duration of time-loss injury and the premium costs of WCB insurance were used as dependent variables in the manager survey. The success of RTW may be inferred from the duration of time-loss from work by injured workers (Krause et al., 1998). Determination of the average duration of time-loss injuries in a workplace is based on the total number of days lost due to injury divided by the number of employees who sustained an injury. In this study, the average duration of time-loss injuries was taken as an indication of the relative success or failure of a workplace to facilitate successful RTW for injured workers.

A second dependent variable in the manager survey analysis was the cost of the WCB insurance premium for each workplace. The amount of premium reflects the workplace's level of risk based, partially, on the previous year's "claims experience" or costs of work-related injuries (i.e. incidence and duration of time-loss injuries) (WCB Manitoba, 2001).

5.4. Independent Variables in the Manager Survey

Worker participation in a more circumscribed form, using only the variables of safety training and labour-management cooperation from the OPP-M, was included as an independent variable in analysis of the manager data. Workplace variables included: type and size of the workplace, whether the workplace was unionized or non-unionized, the number of benefits available to workers, and the variables from the OPP-M questionnaire – people-oriented culture, safety diligence, safety leadership, disability case monitoring, pro-active RTW and ergonomics.

5.5 Summary of Study Variables

A summary of all the study variables that were used to guide the analyses and interpretation of the survey and interview findings are found in Tables 2.1 and 2.2.

Table 2.1 Summary of Study Variables for Employee Survey

Employee Survey **Independent Variables**	**Employee Survey** **Dependent Variables**
Demographic & Worker Variables: Age Gender Marital status Family status (i.e. having children) Educational level Salary range Years experience in occupation Years experience in current job History of work-related injury **Self-efficacy:** General Perceived Self-efficacy Scale – 10 questions	**Worker participation:** OPP-E subscales: Labour- Management Cooperation Safety Training WES subscales: Involvement, Peer Cohesion Autonomy
Workplace variables: OPP-E subscales: People-oriented culture Active safety leadership Safety diligence Ergonomic interventions Pro-active RTW Disability case monitoring WES scales: Supervisor support, Task orientation Work pressure Clarity Managerial control Innovation Physical comfort	

Table 2.2 Summary of Study Variables for Manager Survey

Manager Survey **Independent Variables**	**Manager Survey** **Dependent Variables**
Description and type of workplace: Hospital Community Facility Personal Care Home Size of workplace (number of employees) Percentage unionized Benefits for employees	Average duration of time-loss injuries Amount of WCB premium
Workplace culture: **OPP-M subscales:** People-oriented culture Active safety leadership Safety diligence Ergonomic interventions Pro-active RTW Disability case monitoring	
Worker participation: **OPP-M subscales:** Labour- Management Cooperation Safety Training	

Questions for the one-on-one interviews were not treated as variables; rather, they involved gathering information about the worker's injury, treatment and/or rehabilitation process, and details of the RTW process including opportunities for input, making choices and making decisions.

6.0 A Summary of the Data Analysis Plan

6.1 Overall Approach to Analysis of Employee Data

The first steps in analyzing the employee data were exploratory, using a bivariate correlation analysis to determine to what extent the worker participation variables were associated with all the worker and workplace variables, and a factor analysis to determine whether the data reflected the multi-system RTW model. Subsequent analyses were done for the purpose of testing specific hypotheses as outlined in Figure 5.

6.1.1 Factor analyses

Factor analyses were employed for two purposes: as an exploratory approach to try to discover patterns of relationships, and a means to reduce the large number of variables (Kim & Mueller, 1978; Norman & Streiner, 1999-b; Portney & Watkins, 2000).

6.1.2 Correlation analysis

A bivariate correlation analysis was used to identify those variables that had a significant association with any of the worker participation variables in order to use them in subsequent predictive models using regression analyses.

6.1.3 Regression analyses

Regression analyses were employed, using the worker participation variables as the outcome or dependent variables, and the worker and workplace variables as independent variables.

6.1.4 Between-groups analyses

Two sets of three groups each were identified and compared in the employee data: one set was based on the worker's history of workplace injury (non-injured, injured with less than three weeks time-loss, injured with three weeks or more of time-loss); the second grouping was based on the type of workplace in which the worker was employed (hospital, community facility or personal care home).

6.2 Overall Approach to Analysis of Manager Data

A regression analysis was also applied to the manager data with time-loss injury duration as the outcome variable and the worker participation and the workplace variables as the independent variables.

A between-groups analysis was conducted with the manager data using three

groups according to type of workplace (hospital, community agency and other, personal care home) comparing them with regard to worker participation variables, average duration of time-loss injuries, and cost of WCB premiums.

6.3 Analysis of Qualitative Data

The nature of the worker participation in the RTW process was examined through analysis of the qualitative interviews. Data analysis consisted of transcribing the field notes and audiotapes, then coding and categorizing the data in order to identify themes. A file name (pseudonym) was assigned to each interview in order to maintain anonymity of the informants. Two methods in analysis of data were used to establish trustworthiness: "member checks" and "peer debriefing" (Creswell, 1994; Gliner, 1994; Hasselkuss, 1995; Krefting, 1991; Morse & Field, 1995). "Member checks" involved formal or informal review of the researchers' findings by the informant who provided the data. "Peer debriefing" involved review of a sample number of transcripts by another investigator in order to establish accuracy of the coding and theme development.

6.4 Summary of Analysis Plan

Figure 5 Summary of Statistical Analyses for Employee Survey

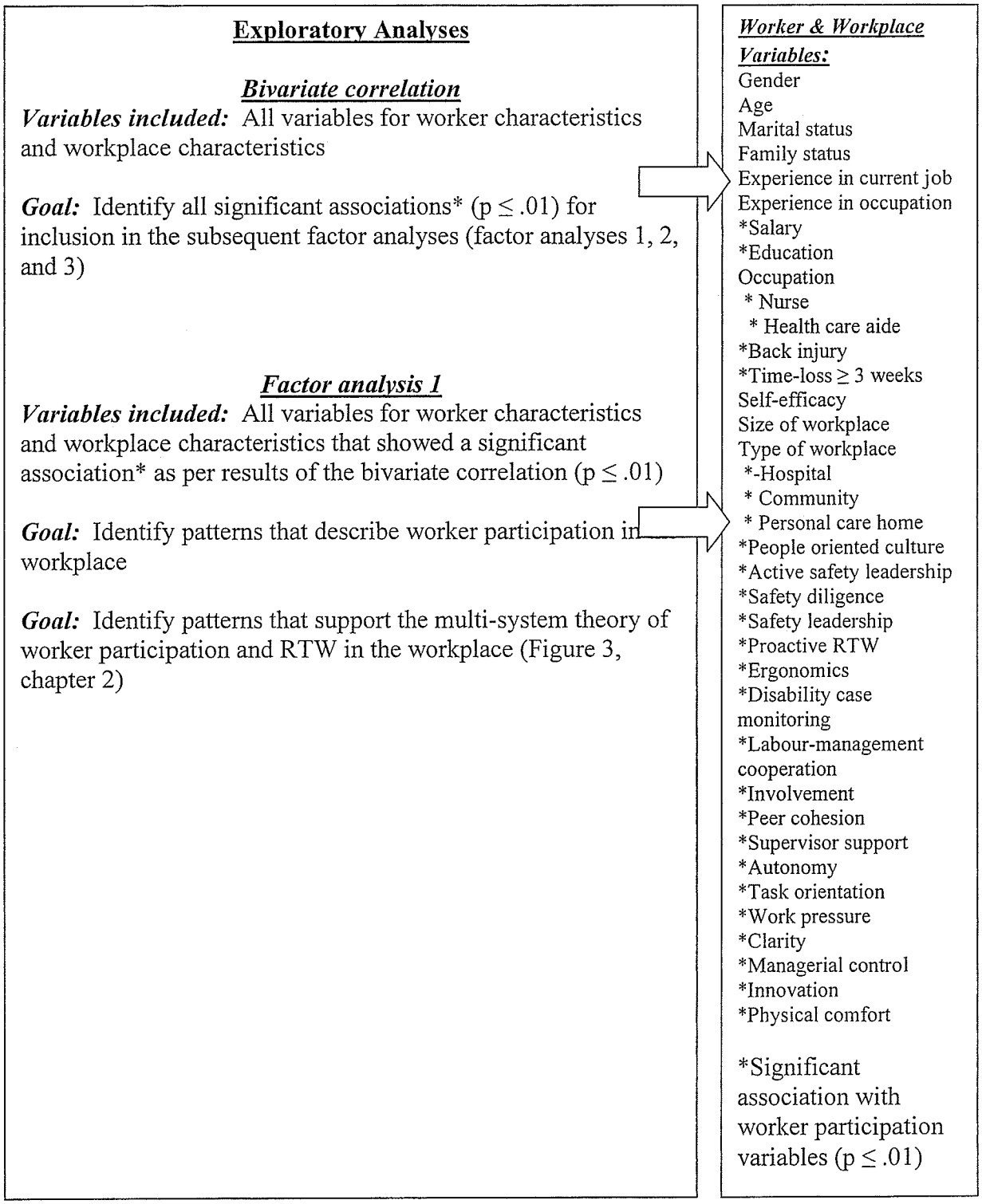


Figure 5, continued

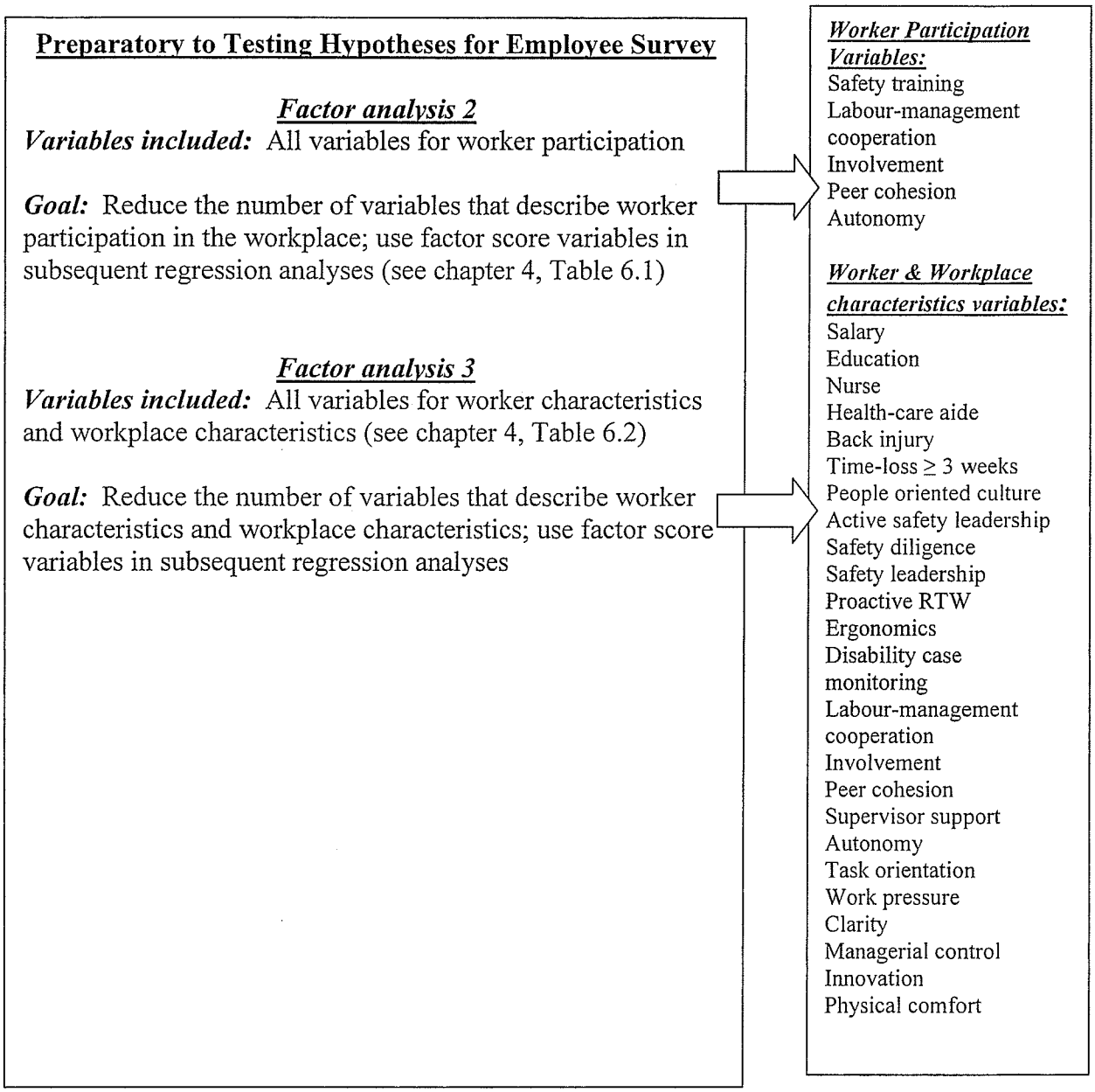


Figure 5, continued

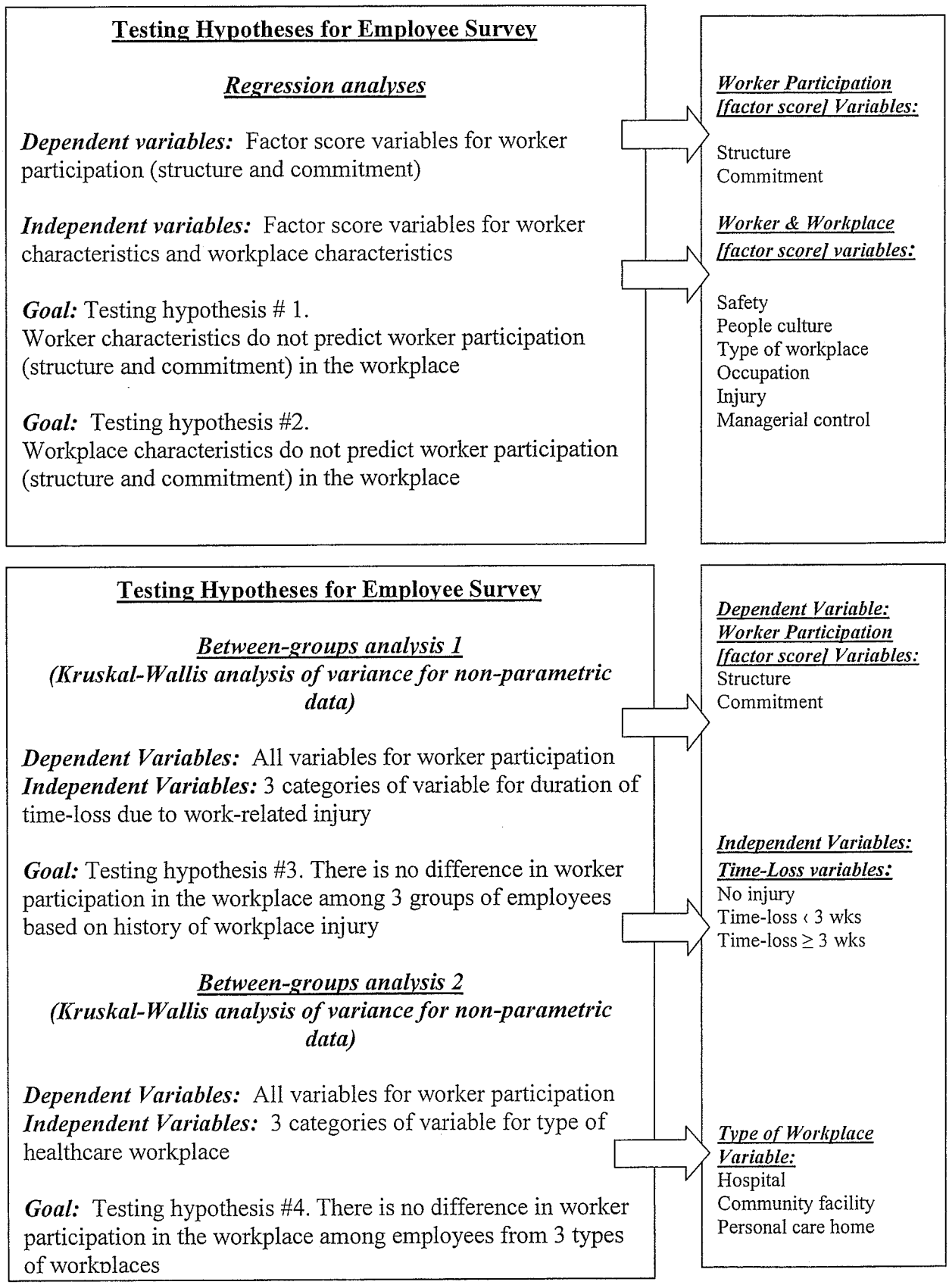
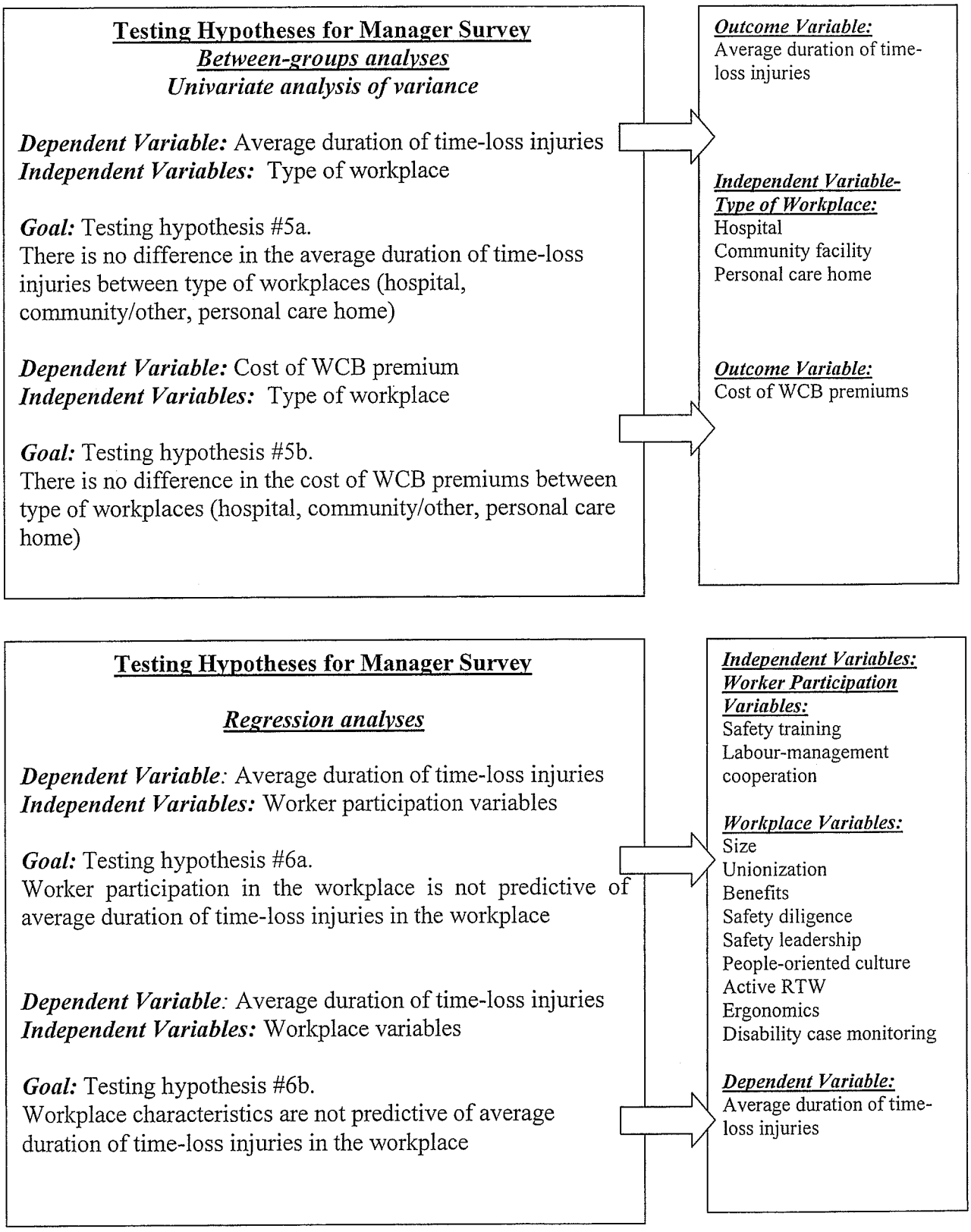


Figure 6 Summary of Statistical Analysis Plan for Manager Survey



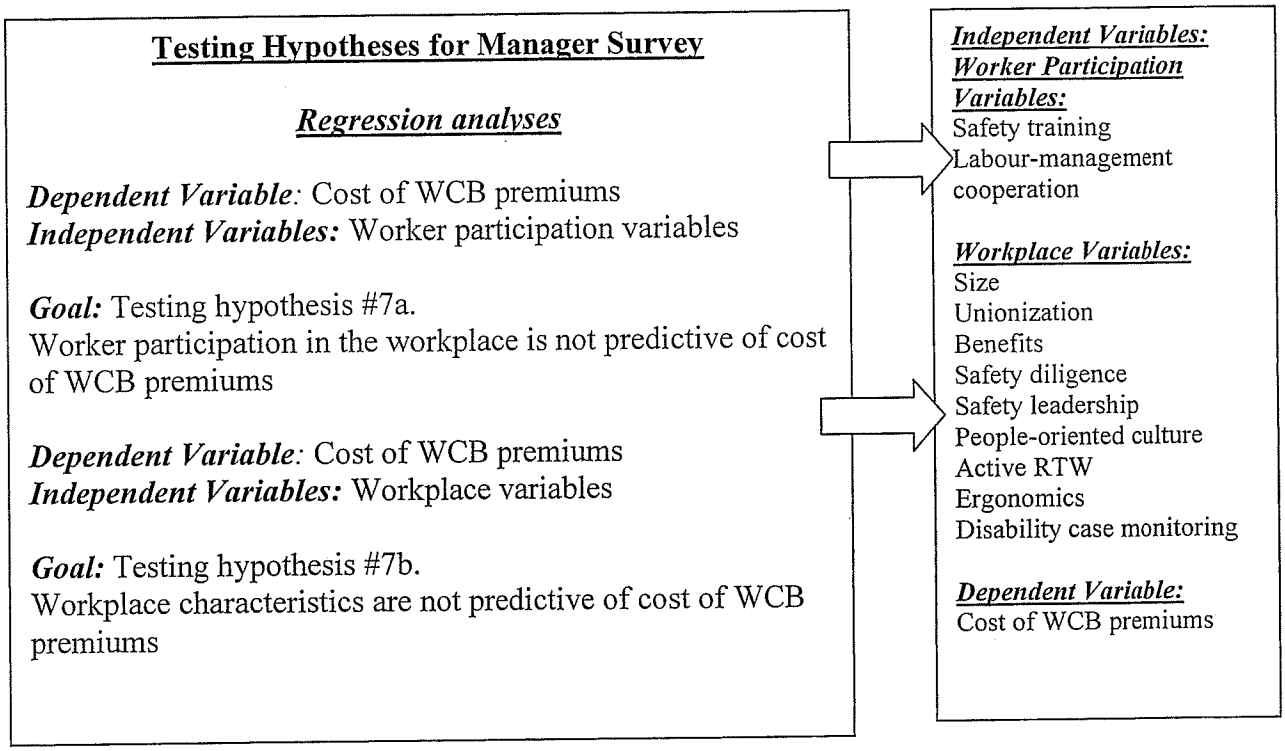


Table 3 Summary of Analysis Plan for Qualitative Data

Qualitative study	Study participants	Interview analysis	Trustworthiness
One-on-one interviews with injured workers to understand the nature of worker participation in the RTW process	Employees within the WRHA who had experienced a time-loss injury within the past two years	Coding of dialogue & establishing categories with identified themes	Member checks Peer debriefing

7.0 Ethical Considerations

Participants were given a brief description of the purpose of the research study. They were told that their participation was entirely voluntary and they could withdraw from the study at any stage without penalty, the data would be identified by file number, and that names would not be used. They were also informed that the original survey or audiotapes would be destroyed following completion of the study. Samples of the consent forms are found in Appendix VII.

The researcher met with union representatives to review the information consent form. Some questions arose with regard to the form, especially about confidentiality and storage of original surveys. Several union representatives requested that the original data be destroyed following the study, and that the confidentiality clause be clarified with regard to guarantee of confidentiality. One union representative decided at that point not to recommend the study to his/her members since the consent form contained a clause which indicated that the law could require disclosure of personal information in certain circumstances. Every effort was made to persuade the representative to reconsider the decision. The union was informed that the survey data would not be linked directly to any identifying information, and it would be extremely unlikely that any information would fall into categories that would require disclosure. Nevertheless, this union chose not to participate.

The Health Research Ethics Board approved the proposed research in May, 2001.

CHAPTER FOUR RESULTS

1.0 Employee Survey Results

1.1 Response Rate and Analysis of Non-response

Two hundred and sixty-three responses were received out of 1135 employee surveys sent, giving a response rate of 23%. One union with an estimated 600 members, many of whom were in trade occupations, chose not to participate in the survey. This may have affected the overall demographic in two ways – by limiting the number of occupational groups represented and by limiting the number of male respondents. Due to confidentiality concerns, the questionnaires had no identification codes; this limited the analysis of non-response (see chapter 5 for discussion of study limitations).

However, a "crude" comparison analysis was conducted by doing a demographic summary of the employees within two facilities of the WRHA—one hospital and one community facility and comparing these demographics to the study sample. Although attempts were made to gather comparison data from a personal care home as well, this was unsuccessful. The study sample was compared overall with the comparison samples. As well, the study sample was grouped to compare the hospital employees with the comparison data from the hospital site, and the community employees with the comparison data from the community site (Table 4). Significant differences were detected between gender representation and between educational levels in the community comparison using a chi-square analysis. Significant differences were also found between all groups (total sample, hospital samples, and community samples) in occupations represented. This may indicate that the predominant occupation of the study sample population was nursing while the comparison samples included a wider representation of

occupational groups. A cautionary note is that these comparisons may not be an accurate representation of the target population since the comparison samples included all employees of the site (either hospital or community), not only the unionized employees. Since the description of the target population was unavailable, this can be only a crude comparison.

Table 4 Comparison of Samples for Employee Data

VARIABLE	STUDY SAMPLE Total N = 262	STUDY SAMPLE Hospital N = 173	STUDY SAMPLE Community N = 48	COMPARISON SAMPLE Community N = 83	COMPARISON SAMPLE Hospital N = 1012	DIFFERENCES Total (p≤.05)	DIFFERENCES Hospital	DIFFERENCES Community
Gender: Male **Female**	32 230	26 146	1 47	18 65	152 860	p =.209	p =1.0	p =.0015*
Age	Range 22-66 Mean 42.9± 10	42.4 ± 9.6	44.2± 10.9	Range 23-66 Mean 47 (approx.)	Range 18-65 (approx) Mean N/A	—		
Education: **<grade 11** **grade 12** **1-2 post-sec** **Degree**	 22 31 149 59	 10 19 101 41	 7 8 25 8	 3.5 9 26.5 44	 0 202 607 202	p =.573	p =.29	p <.0001*
Occupations: **RN** **HCA** **Other prof.** **Other**	 98 71 42 51	 82 31 31 29	 9 20 4 16	 2 5 49 27	 344 121 294 253	p <.0001*	p <.0001*	p <.0001*
Salary: **< $20000** **> $20000-$35000** **> $35000-$50000** **> $50000**	 48 115 80 19	 27 68 62 16	 11 28 7 2	 26 23 27 7	 294 263 283 172	p =.644	p =.385	p =.309

* Significant differences at $p \leq .05$

1.2 Descriptive Data

Descriptive data concerning the employees were collated and summarized as follows (Tables 5.1-5.4): The mean age of respondents was 42.9 ±10; 87.5% were female and 12.2% were male. The majority of respondents was either married or in a relationship and one-half had children living at home. Annual salaries were based on full-time equivalent jobs and ranged from less than $20,000 to greater than $50,000; most had salaries that fell into the category of greater than $20,000 to $35,000 (43.7%) or greater than $35,000 to $50,000 (30.4%). The years of experience working within one's occupation averaged 15.7 years and years experience in the current job, 11.7 years. Nurses represented the largest occupational group (37.3%) while health care aides (including nurse aides, rehabilitation assistants, orderlies, and licensed practical nurses) constituted the second largest group (27%). More than 65% worked within hospitals and nearly 21% within community agencies. The size of the workplace varied from fewer than 50 employees (5.3%) to greater than 1500 employees (31.6%); most workplaces had between 500 and 1500 employees (43.7%).

Both figures for years of experience within a profession or occupation and the years experience in the current job were considered for inclusion in subsequent analyses in order to rule out any possible differences that might be due to job changes. The size of the workplace was adjusted by collapsing six categories into four, so that >50-100 and >100-500 were combined, and >500-1000 and >1000-1500 were combined. The responses to this question on the survey indicated that some people answered the question on "size of workplace" according to the number of people in their department rather than the entire facility. This was able to be corrected to a degree, that is, when the type of

workplace was indicated as a hospital, it was clear that the size of the workplace had to be more than 500 since the smallest hospital in Winnipeg had more than 500 employees. However, when someone who worked for a community agency said they worked alone because they worked in clients' homes by themselves, it was impossible to approximate the size of the community organization that employed them as the sizes of these organizations varied from <50 to >1500. The latter responses were used as written in the survey response forms.

Table 5.1 Worker Description – Age and Gender

AGE	Number	Mean ± Standard Deviation	Age Range
Number of respondents	260	42.9 ± 10	20-66
No response	2		
GENDER	**Number**	**Frequency (%)**	
Female	230	87.5	
Male	32	12.2	
No response	1	0.4	

Table 5.2 Worker Description – Family Status

MARITAL STATUS	Number	Frequency (%)
Single	69	26.2
Married/ Relationship	190	72.2
No response	4	1.5
FAMILY	**Number**	**Frequency (%)**
No children	127	48.3
Children at home	135	51.3
No response	1	0.4

Table 5.3 Worker Description – Occupation, Salary, Education, Work Experience, and Work-related Injury

OCCUPATION	Number	Frequency (%)
RN	98	37.3
HCA	71	27.0
Professional	42	16.0
Other	51	19.4
No response	1	0.3
SALARY	**Number**	**Frequency (%)**
< 20,000	48	18.3
20,000 to 35,000	115	42.6
35,000 to 50,000	80	30.0
>50,000	19	7.2
No response	1	1.9
EDUCATION	**Number**	**Frequency (%)**
≤grade 11	22	8.4
Grade 12	31	11.8
1-2 years post-secondary	149	56.7
University degree	59	22.4
No response	2	0.8
WORK EXPERIENCE	**Number**	**Mean**
Years experience overall	262	15.7 ± 9.7
Years in current job	256	11.7 ± 8.7
HISTORY OF WORK –RELATED INJURY	**Number**	**Frequency (%)**
No Injury	143	54.4
Less than 3 weeks time-loss	68	25.8
3 weeks or longer duration time-loss	52	19.8

Table 5.4 Description of Workplaces from Employee Data

TYPE of Workplace	Number	Frequency (%)
Hospital	173	65.8
Community (& other) Agency	55	20.9
Personal Care home	32	12.2
No response	3	1.1
SIZE of Workplace	**Number**	**Frequency (%)**
<50	14	5.3
50-500	44	16.7
501-1500	115	43.7
>1500	83	31.6
No response	7	2.7

1.3 Exploratory Analyses

Exploratory analyses of the data were conducted in order to demonstrate that the relevant components of the multi-system model of RTW were reflected in the data. These components included aspects of the worker, including worker participation, and the workplace including worker characteristics, workplace characteristics such as various aspects of safety, RTW, managerial styles.

1.3.1 Bivariate Correlation

All variables were entered into a bivariate correlation analysis, including the scores from each of the sections in the OPP and the WES questionnaires as well as the overall score from the self-efficacy scale. A Spearman rank correlation coefficient (or Spearman's rho) for ordinal data was used. The complete correlation matrix is shown in Appendix VII. Due to the large sample size, many of the correlation coefficients were deemed significant although they had low strength of association (Portney & Watkins, 2000). According to Portney and Watkins (2000), correlations smaller than r = .25,

despite their level of significance, should be interpreted with caution. In order to address this caution to a limited degree, correlations in this study from the employee data were reported and used in subsequent analyses if they met the more stringent criteria for α error where $p \leq .01$ (Table 6). Despite this application of the more stringent criteria, strength of correlations remained somewhat low, ranging from .136 to .245.

Worker variables – salary, education, occupation (nurse, health care aide), history of back injury, and three weeks or longer time-loss injury met the criteria for cut-off ($p \leq .01$) in relationship to worker participation variables and/or workplace characteristics. These variables were entered into subsequent analyses. All worker participation and workplace characteristics from the OPP-E and WES scales were strongly associated with each other, and were also included in subsequent analyses.

1.3.2 Factor Analysis

In order to try to discern patterns of relationships among the large number of variables, an exploratory factor analysis was applied to all variables (Appendix VII, Table A2). In a factor analysis, variables that "load" a component are determined by the coefficients as displayed in the table—the higher the coefficient (negative or positive), the greater the loading factor. Twelve components with an eigenvalue greater than one were identified and accounted for 72% of the variance. Application of the Varimax rotation analysis highlighted several major "issues" but did not clearly separate components, i.e. the components were still somewhat correlated. The major issues reflected an emphasis on a positive people environment, safety culture, worker characteristics, workplace descriptors, and work-related injury descriptors. The issues reflect the complex and multi-system nature of worker participation and RTW in the workplace. However, the

concept of worker participation was not clearly identified as a separate component within the multi-system and multi-factorial picture. For this reason, subsequent factor analyses were conducted separately for the worker participation variables, and again, separately for the worker and workplace characteristics (Tables 7.1 & 7.2).

1.4 Factor Analyses Preparatory for Prediction Models

Twenty-seven variables representing worker and workplace characteristics were entered into a factor analysis in order to try to reduce the large number of variables used in subsequent analyses. Six major components resulted, accounting for approximately 54% of the variance. The components were labeled "safety culture", "people environment", "type of workplace", "occupation", "injury", and "managerial control" (Table 7.1). The resulting factor scores were then used as independent variables to be entered into a model for multivariate regression analysis that used worker participation variables as the outcome measure. Note that coefficients with a weighting < 0.10 are not reported.

As may be noted in Table 7.1, the "safety" component was "loaded" by variables of people-oriented culture, active safety leadership, safety diligence, safety training, ergonomics, return to work, labour management cooperation, and clarity. The "people environment" component was loaded by variables of people oriented culture, involvement, peer cohesion, supervisor support, autonomy, task orientation, clarity, innovation, and physical comfort. The "type of workplace" component was loaded by work pressure, nurse, health care aide (a negative loading), hospital, and community workplace. The "occupation" component was driven by salary, education, and nurse. The "injury" component was driven by back injury, and time-loss injury while the

Table 6 Bivariate Correlations for Employee Data

	Salary	Education	Nurse	Health care aide	Back Injury	Hospital	Community Workplace	Personal care home	Time-loss injury
People-oriented culture		.172**							-.135**
Active safety leadership								.202**	
Safety diligence								.218**	
Safety training							-.195**	.173**	
Ergonomics				.136**				.220**	
Disability case monitoring					-.171**				-.204**
Return to work					-.188**				
Labour-mgm't cooperation					-.181**		-.165**	.189**	-.212**
Involvement									
Peer cohesion			.245**	-.235**		.206**	-.197**		
Supervisor support									-.138**
Autonomy									
Task orientation	.183**			-.203**					
Work pressure		.176**	.210**	-.206**		.226**	-.162**		
Clarity									
Managerial control							-.164**	.192**	
Innovation					-.174**				-.188**
Physical comfort	-.228**								

**p ≤.01

"managerial control" component was driven by autonomy, managerial control, and personal care home.

Five variables used to indicate worker participation (safety training, labour-management cooperation, involvement, peer cohesion, autonomy) were included in a factor analysis in order to try to reduce the number of outcome variables (Table 7.2). Two components resulted from the analysis, labeled "structure" and "commitment". Labour-management cooperation and safety training loaded onto one factor, labeled "structure", and were interpreted to indicate worker participation in structured programs for direct worker involvement in the workplace such as training programs or committees. The variables of worker involvement, worker autonomy, and peer cohesion loaded onto a second factor, labeled "commitment" and were interpreted to be indicative of a worker's inner motivation and commitment to the job.

1.5 Fit with the Multi-system Model of Worker Participation and RTW in the Workplace

As postulated, the factor analysis confirmed that components of worker characteristics, workplace characteristics, and worker participation were represented in the data. The evidence suggested that a safety culture, people-oriented environment, managerial style, as well as workers' occupation and history of injury were key elements in the RTW model. However, the nature of the relationship among these elements was not discernible from a factor analysis; subsequent analyses were therefore carried out and are reported in the following pages.

Table 7.1 Factor Analysis of Worker and Workplace Variables†

Components	1	2	3	4	5	6
	Safety	People culture	Type of workplace	Occupation	Injury	Managerial Control
Salary			.293	.693‡		
Education	-.104		.182	.645‡	-.248	
People-oriented culture	.499‡	.609‡				
Active safety leadership	.738‡	.338				.101
Safety diligence	.724‡	.338				.261
Safety training	.748‡	.194			.121	.162
Ergonomics	.651‡	.323	-.169			.113
Disability case monitoring	.785‡	.117			-.175	
Return to work	.761‡	.185			-.210	
Labour-mgm't cooperation	.807‡	.126	.115		-.201	
Involvement	.145	.808‡		.104		
Peer cohesion		.751‡	.284	.153		
Supervisor support	.355	.705‡				-.158
Autonomy	.234	.524		.171	-.104	-.458‡‡
Task orientation	.132	.730‡	.124	.117		.244
Work pressure	-.311	-.201	.413‡	.223	-.145	.229
Clarity	.448‡	.651‡		-.109	.128	.211
Managerial control	.180	.111	.124	-.105		.737‡
Innovation	.272	.584‡			-.113	-.247
Physical comfort	.195	.493‡	-.203	-.285		
Nurse		.133	.507‡	.503‡		
Health care aide			-.642‡‡		.381	
Back injury		-.116			.774‡	
Time-loss injury	-.141			.109	.735‡	
Hospital			.830‡		-.217	-.238
Community workplace	-.232		-.709‡‡		-.121	-.202
Personal care home	.254		-.292		-.158	.580‡

† Note that coefficients with weighting < .10 are not reported

‡ Note that variables with coefficients higher than .400 are considered to be "loaded" on that particular component

‡‡ Note that negative numbers are considered to "load" in the opposite direction

Table 7.2 Factor Analysis of Worker Participation Variables – Employee Data

Components:	Commitment 1	Structure 2
OPP-Safety Training		.863‡
OPP-Labour-managem't		.865‡
WES-Involvement	.852‡	
WES-Peer Cohesion	.897‡	
WES-Autonomy	.706‡	

‡ Note that numbers higher than .400 are considered to be "loaded" on that particular component

1.6 Testing the Models for Prediction of Worker Participation in the Workplace

A regression analysis was used to test the model of worker participation in the workplace. A forward stepwise regression analysis was carried out using factor scores as dependent variables for worker participation (commitment and structure), as well as factor scores to represent worker characteristics (occupation, injury), and workplace characteristics (safety culture, people environment, type of workplace, managerial control).

The model that best predicted commitment in worker participation included all six predictors in the following order: people environment, type of workplace, occupation, safety culture, managerial control, and injury (Table 8.1, Figure 7.1). The model that best predicted structured worker participation included four predictors in the following order: safety culture, people environment, type of workplace, and managerial control (Table 8.2, Figure 7.2). All predictors in both regression models were significant at the $p \leq .05$ level.

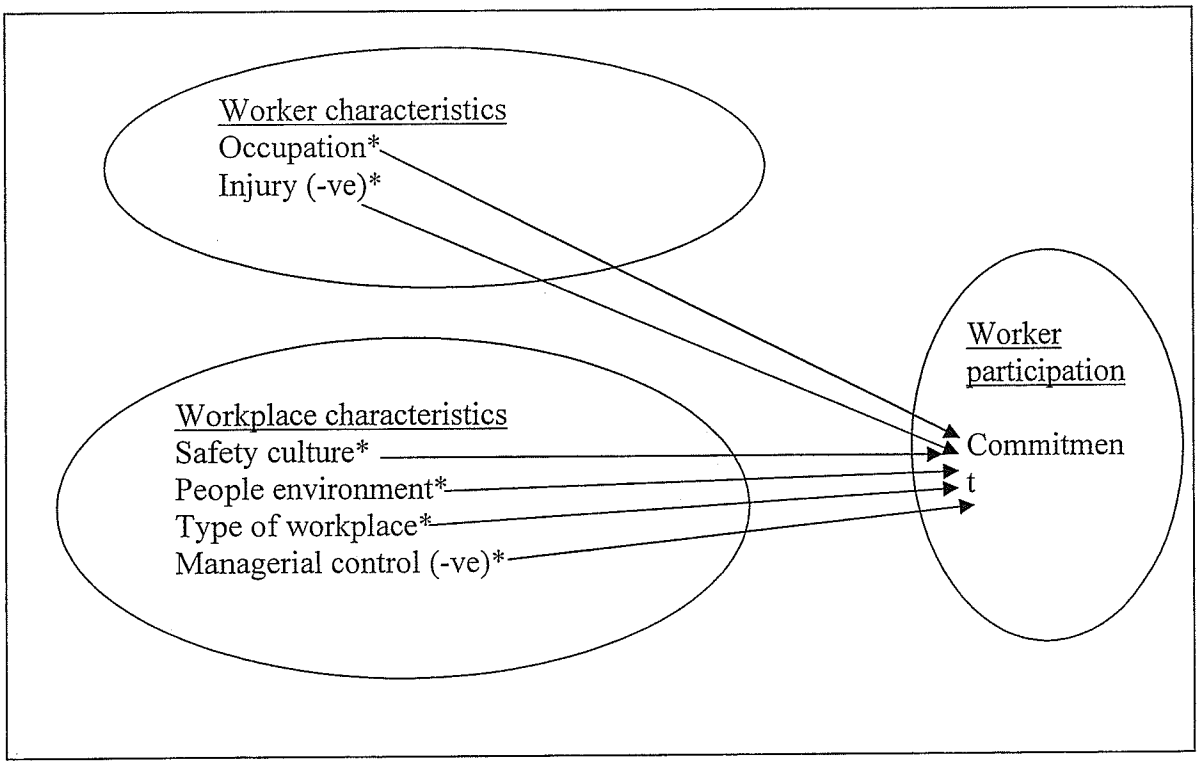
Table 8.1 Significant Predictors for Worker Participation, Commitment, in the Workplace

Final Model	Non-standardized Beta Coefficients	Standard error	t	Significance
Constant	-0.0109	.025	-.441	.660
People environment	.851	.025	34.337	.0001
Type of workplace	.173	.025	6.961	.0001
Occupation	.170	.025	6.876	.0001
Safety culture	.168	.025	6.776	.0001
Managerial control	-.163	.025	-6.567	.0001
Injury	-.103	.025	-4.152	.0001

Table 8.2 Significant Predictors for Worker Participation, Structure, in the Workplace

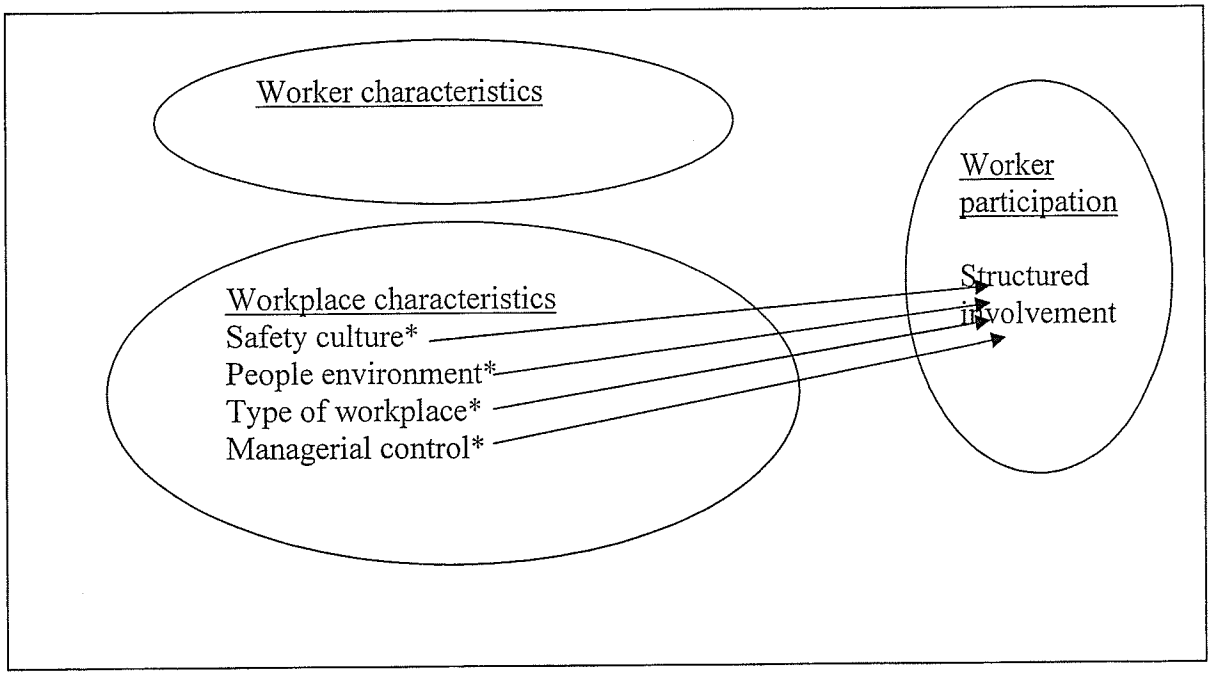
Final Model	Non-standardized Beta Coefficients	Standard error	t	Significance
Constant	0.024	.025	.981	.328
Safety culture	.889	.025	35.888	.0001
People environment	.177	.025	7.163	.0001
Type of workplace	.098	.025	3.939	.0001
Managerial control	.051	.025	2.024	.044

Figure 7.1 Predictors for Commitment of Worker Participation in the Workplace



*p ≤ .05

Figure 7.2 Predictors for Structured Involvement of Worker Participation in the Workplace



*p ≤ .05

1.7 Between-groups Analyses

As well as analyzing for predictor models, two between-groups analyses were conducted in order to determine whether there was any difference in worker participation in the workplace among workers who had experienced time-loss injuries and workers who had not experienced injuries or had less than three weeks of time-loss. Three groups were identified: those with no injury, those with less than three weeks time-loss due to an injury, and those who experienced three weeks or longer of time-loss due to injury.

A second set of three groups was analyzed for differences in worker participation among those who were employed by hospitals, community workplaces, or by personal care homes. A Kruskal-Wallis test, suitable for ordinal data with three or more groups (Sharp, 1979), was used for both analyses.

1.7.1 Time-loss groups

Employees were grouped by non-injured, injured with time-loss of three weeks or less, and injured with time-loss of more than three weeks (Table 9). No significant differences were found between groups in the factor score variables of worker participation—commitment or structured worker participation. Subsequently, a Kruskal-Wallis analysis of variance was applied using the original variables of safety training, labour-management cooperation, involvement, peer cohesion, and autonomy. Labour-management training showed a significant difference among the three groups. These results suggest that employees with injuries, regardless of the duration of time-loss, are more likely to participate in the workplace than workers with no injury.

Table 9 Group Comparison for Injured and Non-injured Employees

Variables	Groups	N	Median	Chi-square	Df	Asymp. Sig.	Pair-wise analysis‡
Worker participation--commitment	A B C	133 66 50	.116 .007 .006	3.59	2	.166	
Worker participation--structure	A B C	133 66 50	.310 .101 .284	4.91	2	.086	
Safety training	A B C	142 67 52	3 3 3	1.64	2	.440	
Labour-management cooperation	A B C	134 67 50	6 5 6	13.45	2	.001**	A B C
Involvement	A B C	143 68 52	6 6 5.5	3.52	2	.172	
Peer cohesion	A B C	143 68 52	6 5.5 6	2.33	2	.312	
Autonomy	A B C	143 68 52	6 5 5	2.80	2	.247	

* $p \leq .05$; ** $p \leq .01$ A= no-injury, no time-loss; B = Timeloss ⟨ 3 wks; C = Timeloss ≥ 3 wks

‡ Note that when letters are joined by a line, there is no significant difference between the groups so joined

1.7.2 Workplace groups

Employee respondents were also divided into groups according to the type of workplace in which they were employed: hospitals, community workplaces (including "other" workplaces) and personal care homes (Table 10). These groups were entered into a Kruskal-Wallis statistical analysis to determine whether there was any difference in their experience of worker participation in the workplace. Initially, the factor score variables of worker participation—commitment and structured worker participation were used as the dependent variables. In order to determine where the difference lay more specifically, the original variables were also entered into the analysis. This resulted in significant differences ($p \leq .05$) in both commitment and structure in worker participation

in all three groups, as well as a significant difference in labour-management cooperation, safety training, involvement, and peer cohesion. These results suggest that the type of workplace likely has a major impact on the extent of workers' participation in the workplace.

Table 10 Between-groups Analysis Based on Type of Workplace – Employee Data

Variables	Groups	N	Median	Chi-square	Df	Asymp Signif.	Pair-wise analysis‡
Worker participation – commitment	H C P	161 53 32		12.94	2	.003**	H C P
Worker participation – structure	H C P	161 53 32		10.74	2	.024*	H C P
Safety training	H C P	172 54 32	3 3 3	13.75	2	.004**	H C P
Labour-management cooperation	H C P	162 54 32	6 5.5 6	12.80	2	.026*	H C P
Involvement	H C P	173 55 32	7 5 6	6.68	2	.024*	H C P
Peer cohesion	H C P	173 55 32	6 5 5.5	12.67	2	.004**	H C P
Autonomy	H C P	173 55 32	5 5 5	2.60	2	.273	

* $p \leq .05$; ** $p \leq .01$; H = Hospital, C = Community workplace, P = Personal care home

‡ Note that when letters are joined by a line, there is no significant difference between the groups so joined

2.0 Manager Survey Findings

2.1 Response Rate

Thirty-two responses were received or recorded (via telephone interview) out of 67 facilities that were considered eligible for the study. Two responses came from the same facility and were treated as a single response. Because the estimated number of facilities under WRHA has changed several times since the study began, the numbers reported here may vary slightly from numbers that might be obtained at the present time. The researcher started from a list, supplied by WRHA, of 133 facilities, which was changed by WRHA to 117 facilities several months later. Of the list of 117 facilities, 41 had fewer than 20 employees. Some of the facilities or services were supported by a WRHA grant or contract for only one or two part-time or full-time staff, which accounted for their being on the list of WRHA facilities. Of the 76 remaining facilities, 9 sites were eliminated as separate facilities since they were, apparently, considered as part of the administration of another facility, i.e. one manager responded for two sites such as a seniors' lodge and a personal care home. The final eligible number of potential respondents was determined to be 67. The number of responses was 32, a response rate of 47.8%. All the hospitals (n=6) responded to the survey, 13 out of a potential 33 personal care homes and 13 out of a potential 32 community facilities responded to the survey. Although the community represented the greatest variability in size of facility, this was likely a result of one agency having a very large number of employees (approximately 4000) while all other community agencies had fewer than 150 employees. Where facilities were not covered by workers' compensation, injury data was incomplete and unavailable for analysis.

2.2 Descriptive Findings

The managers/facilities who responded represented three major employer groups: hospitals, personal care homes and community agencies. Two facilities were categorized as "other" and these were included in the community agencies category for purposes of the analyses (see Tables 11.1 & 11.2). Notable in the descriptive data is that the community represents the greatest variability in size of facility; two community agencies and one personal care home indicated they were not covered by workers' compensation; one community agency and four personal care homes did not employ unionized staff. All workplaces indicated they had a cooperative relationship with WCB; only one of the hospitals did not regularly appeal WCB injury claims.

Table 11.1 Description of WRHA Facilities – Manager Data

VARIABLES	HOSPITAL (means ± SD)	COMMUNITY (means ± SD)	PERSONAL CARE HOME (means ± SD)
FTE hours	2311 ± 2455.9	460.2 ± 829.7	271.9 ± 271.4
Unionized (%)	83.7 ± 7.9	74.4 ± 34.9	60.7 ± 42.6
WCB rate (/$100 payroll)	$1.33 ± .43	$1.15 ± 1.04	$1.24 ± .38
Number of time loss injuries for year 2000	104 ± 90.3	26.9 ± 59	20.9 ± 21.6
WCB cooperation (%)			
– Yes	100	100	100
- No	0	0	0
WCB dedicated staff (%)			
– Yes	100	50	90
- No		50	10
WCB appeals (%)	33 ± 34.2	14.3 ± 19.7	28.8 ± 17.2

Table 11.2 Description of WRHA Facilities – Manager Data

VARIABLES	HOSPITAL (median score & range)	COMMUNITY (median score & range)	PERSONAL CARE HOME (median score & range)
Benefits	31.5 (27-44)	24 (0-26)	29 (18-37)
Safety Diligence	23.5 (14-31)	26 (20-35)	30 (25-35)
Safety Training	16.5 (8-20)	12.5 (5-20)	18 (10-20)
Ergonomics	24.5 (14-33)	20 (11-33)	27 (11-35)
Disability Case Monitoring	33.5 (25-35)	22.5 (7-32)	32 (14-35)
RTW	32.5 (27-40)	22.5 (7-32)	32 (21-35)
Active Safety Leadership	28 (12-35)	25 (9-33)	33 (21-35)
People Oriented Culture	27 (18-40)	38 (29-45)	34 (23-42)
Labour Management Cooperation	15.0 (9-18)	14 (9-18	15 (9-18)

2.3 Exploratory Analysis

A bivariate correlation analysis was conducted using all the workplace descriptor variables from the survey: size, type of workplace, percentage unionized, WCB premium rate, benefits, and work injury variables of number of work injuries, time-loss duration, as well as the OPP-M sub-scale scores. Reported here are the variables that were significantly associated with average duration of time-loss injuries or with either of the two worker participation variables: labour-management cooperation and safety training, or the "participative" workplace descriptors: safety diligence, ergonomics, RTW, safety leadership, and people-oriented culture (Table 12).

As expected, a number of the safety and RTW variables were negatively associated with increased duration of time-loss injuries. Increased scores in safety diligence, safety training, RTW, safety leadership, ergonomics, people-oriented culture, and labour-management cooperation were associated with lower duration of time-loss injuries.

Table 12 Correlation Matrix – Manager Data

	Hospital	Com-munity Facility	Personal Care Home	Size of Work-place	WCB Pre-mium	WCB appeals	Average Durat'n Time-loss.	Benefits	Safety Dili-gence	Safety Training	Ergo-nomics	Dis-ability Case Monitor.	Pro-active RTW	Active Safety Leader.	People orient-ed Cult.	Labour -mgmt coop'n
Hospital	1.000															
Community Facility	-.397*	1.000														
Personal Care Home	-.397*	-.684**	1.000													
Size of Workplace	.607**	-.575**		1.000												
WCB Premium					1.000											
WCB appeals				.424*		1.000										
Average Duration Time-Loss							1.000									
Benefits	.478**	-.686**		.514**				1.000								
Safety Diligence			.350*				-.595**		1.000							
Safety Training		-.362*					-.580**	.437*	.632**	1.000						
Ergonomics									.539**	.587**	1.000					
Disability Case Monitoring		-.494**		.502*		.447*		.482**		.422*		1.000				
Pro-active RTW									.379*	.535**	.549**	.490**	1.000			
Active Safety Leadership		-.440*	.458*						.476**	.568**	.593**	.581**	.408*	1.000		
People oriented Culture	-.435*	.360*					-.627**		.517**						1.000	
Labour-Mgmt Coop'n					-.411*		-.475*		.482**	.375*	.387*			.527**	.511**	1.000

*p ≤= .05 **p ≤ .01

2.4 Comparison in Types of Workplaces

2.4.1 Duration of time-loss and cost of WCB premiums

Data were grouped according to type of workplace – hospital, community agency or personal care home. The average duration of time-loss injuries was computed by dividing the total number of days lost due to injury by the number of time-loss injuries. A one-way analysis of variance was used to compare the average duration of time-loss injuries and the cost of WCB premiums among the three types of workplaces (Table 13). No significant differences were found among hospitals, community workplaces, or personal care homes in the average duration of time-loss injuries nor in the cost of WCB premiums per $100 payroll.

Table 13 Comparison of Type of Workplace for Average Duration of Time-loss and Cost of WCB Premiums

Type of Workplace	Hospital N = 6	Community N=6	PCH N=11	F score
Average days time-loss	34.47 ±	33.43 ±	26.7 ±	.241
Cost WCB premium/$100 payroll	$1.33 ± .43	$1.15 ± 1.04	$1.24 ± .38	.311

*p </= .05; (No significant associations found in analysis)

2.4.2. Comparison of workplace characteristics

A Kruskal-Wallis analysis for the three groups (hospitals, community facilities and personal care homes) on all variables found that the groups differed significantly ($p \leq .05$) in size, the number of benefits available to employees, and incidence of work injuries for the year 2000. The workplaces also differed significantly in some areas that are indicative of a participative workplace: active safety leadership, people-oriented

culture, and disability case monitoring (Table 14). A subsequent pair-wise analysis of these variables found that hospitals differed from community workplaces in size, work injury incidence, benefits, disability case monitoring and in people-oriented culture. Hospitals differed from personal care homes only in size and work injury incidence. Community workplaces and personal care homes differed in size, work injury incidence, benefits, disability case monitoring, and active safety leadership.

2.4.3 Comparison of worker participation

Worker participation in the workplace (manager data) was measured by the two variables: labour-management cooperation and safety training. Although this is a less comprehensive measure of worker participation than that used in the employee data, it gives some indication of how well the workplace creates opportunities for workers to participate via structured formats such as committees or training sessions. Results indicated that there was no significant difference in worker participation among the three types of workplaces.

Table 14 Between-groups Analysis for Type of Workplace – Manager Data

Name of Variable	Median & range or Mean ± SD	F score	df	Significance	Pair-wise Analysis
Size of Workplace (FTE hours) (median & range)	H – 2311 C – 460 P – 271	15.53	2	.0001**	H C P
Percentage of Unionized Employees (mean ± SD)	H – 83.7 C – 74.4 P – 60.7	1.05	2	.593	
WCB Premium (mean ± SD)	H – 1.33 C – 1.15 P – 1.24	1.74	2	.418	
Work Injury Incidence (2000) (mean ± SD)	H – 104 ± 90 C – 26.9 ± 59 P – 20.9 ± 21.6	11.32	2	.003**	H C P
Average Days Time Loss (2000) (mean ± SD)	H – 34.57 C – 33.4 P – 26.7	2.177	2	.337	
Number of Benefits (median & range)	H – 31.5 C – 24 P – 29	15.24	2	.0001**	C P H
Number of Claims Appeals (%) (mean ± SD)	H – 33 C – 14.3 P – 28.8	3.50	2	.174	
Safety Diligence (median & range)	H – 23.5 C – 26 P – 30	4.34	2	.114	
Safety Training (median & range)	H – 16.5 C – 12.5 P – 18	3.99	2	.136	
Ergonomics (median & range)	H – 24.5 C – 20 P – 27	2.37	2	.305	
Disability Case Monitoring (median & range)	H – 33.5 C – 22.5 P – 32	8.04	2	.018*	C P H
Pro-active RTW (median & range)	H – 32.5 C – 22.5 P – 32	.93	2	.629	
Active Safety Leadership (median & range)	H – 28 C – 25 P – 33	7.44	2	.024*	H C P H
People Oriented Culture (median & range)	H – 27 C – 38 P – 34	7.15	2	.028*	H C P
Labour-Management Cooperation (median & range)	H – 15 C – 14 P – 15	0.36	2	.837	

*p≤ .05, **p≤ .0;1 [a] H = hospital, C = community facility, P = personal care home

2.5 Testing the Multi-System Model of Worker Participation and RTW in the Workplace

2.5.1 Predictors for average duration of time-loss due to injury – manager data

A model was developed for testing predictors of the outcome variable of average duration of time-loss injuries among the workplaces represented in the manager survey. All variables that had a significant association, as determined in the bivariate correlation analysis (Table 12), with either average duration of time-loss injuries, cost of WCB premiums, or with the worker participation and workplace characteristics drawn from the survey data were used as independent variables. The dependent variable of average duration of time-loss injuries was calculated using claims data obtained from Manitoba Workplace Safety and Health (2001). The average duration of time-loss injuries may be taken as an indicator of the success or failure of RTW since it is one of the measures for success in evaluation of RTW programs (Krause et al., 1998).

A forward stepwise regression analysis was conducted using the value of "average duration time-loss injury" as the dependent variable and values for independent variables of safety diligence, safety training, labour-management cooperation, people-oriented culture, safety leadership, safety diligence, ergonomics, disability case monitoring, RTW, number of benefits, number of claims appeals, and amount of WCB premium.

People-oriented culture (Table 15.1, Fig. 8) emerged as the only significant predictor for average duration of time-loss injury. As the slope or correlation was a negative correlation, this suggests that higher values in people-oriented culture were associated with decreased average duration of time-loss injuries.

2.5.2 Predictors for cost of WCB premiums

A model was developed for testing predictors of the outcome variable of cost of WCB premiums among the workplaces represented in the manager survey. All variables that had a significant association, as determined in the bivariate correlation analysis (Table 12), with either average duration of time-loss injuries, cost of WCB premiums or with the worker participation and workplace characteristics drawn from the survey data were used as independent variables. The outcome variable used was the cost of WCB premiums per $100 payroll as reported for the year 2000.

A forward stepwise regression analysis was conducted using the value of "cost of WCB premiums per $100 payroll" as the dependent variable, and values for independent variables for safety diligence, safety training, labour-management cooperation, people-oriented culture, safety leadership, safety diligence, ergonomics, disability case monitoring, RTW, number of benefits, and number of claims appeals.

Safety training and labour-management cooperation, the two variables representing worker participation (Table 15.2, Fig. 8) emerged as the only significant predictors for cost of WCB premiums. As both variables were found to have a negative slope or correlation, it may be concluded that increased labour-management cooperation and increased safety training, i.e. increased worker participation, is predictive of decreased costs of WCB premiums for the workplace.

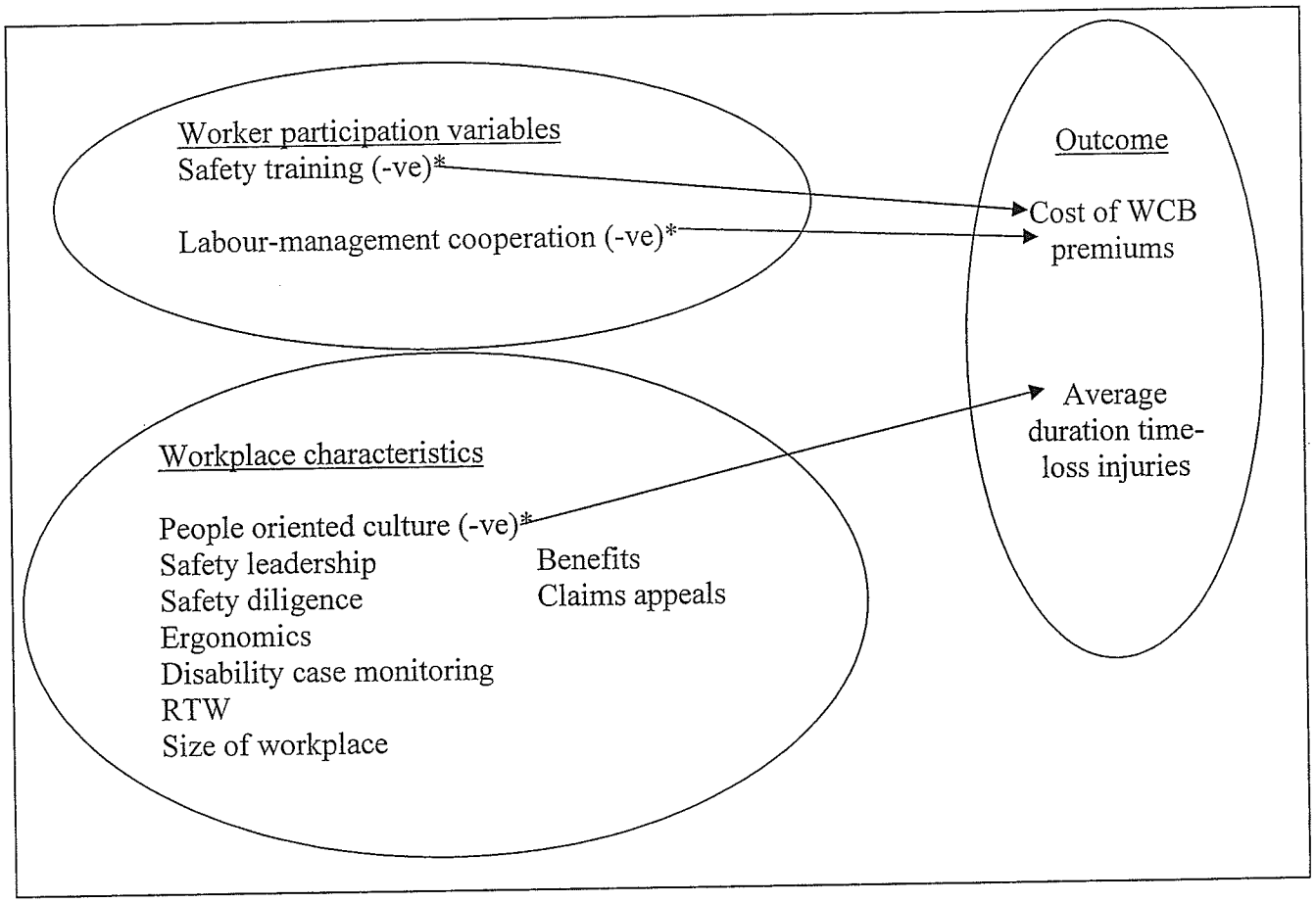
Table 15.1 Predictors for Average Duration of Time-Loss Injuries – Manager Data

Model	Non-Standardized Beta coefficients	Standard error	t	Significance
Constant	70.486	14.274	4.938	
People-oriented culture	-1.324	.431	-3.072	.006

Table 15.2 Predictors for Cost of WCB Premiums – Manager Data

Model	Non-Standardized Beta coefficients	Standard error	t	Significance
Constant	4.308	.826	3.991	.001
Safety Training	-.116	.051	-2.274	.035
Labour-management cooperation	-.168	.077	-2.175	.043

Figure 8 Predictors for Average Duration of Time-loss Injuries and for Cost of WCB Premiums – Manager Data



*$p \leq .05$

3.0 Qualitative Analysis Findings

Each participant was interviewed face-to-face using open-ended questions and inviting each person to describe his/her experience of recovery and RTW following the injury. Participants were asked to focus particularly on how they were involved in that process with regard to receiving information about their injury or the RTW plan, and with any input, choices or decisions they were able to have or to make within the recovery and RTW process.

Data analysis consisted of transcribing the field notes and audiotapes, then coding and categorizing the data in order to identify themes. A file letter (i.e. A., B. etc.) was assigned to each transcript in order to maintain confidentiality of the participants. Two types of data analysis were used to establish trustworthiness – "member checks" and "peer debriefing" (Creswell, 1994; Gliner, 1994; Hasselkuss, 1995; Krefting, 1991; Morse & Field, 1995). Member checks involved informal review of the transcript and a summary of the initial analysis by each interview participant. Peer debriefing involved review of all the transcripts, coding and category analysis by two investigators otherwise not connected with the study, in order to establish accuracy and validity of the coding and theme development.

Subsequent to the member checks review, no further revisions were needed. Subsequent to the peer debriefing, definitions of choice and decision-making were clarified and a subsequent theme of "novice versus experienced" was added.

3.1 Participant Descriptions

Six participants volunteered and were interviewed. Attempts were made to increase the number of participants by calling various healthcare facilities and requesting

them to put up a poster and to let their staff know about the study and the opportunity to participate. As well, follow-up calls were made to occupational health departments within the healthcare facilities to request them to advertise the study and the request for volunteers.

The interview participants had all experienced a work-related injury although two individuals had their injury claim of carpal tunnel syndrome denied with no further treatment or assistance in RTW offered by the WCB. One of these two also experienced ongoing work-related allergies. This individual had access to a long-term disability insurance benefit for treatment of the carpal tunnel syndrome while the other individual was in the process of appealing the claim through the workers' advocate office. Three participants experienced a back injury and one sustained a brain injury. Of the participants who experienced a back injury, one was a "repeat" injury and the other two were first-time injuries. The supervisor sustained a back injury while lifting a heavy item while the two health care aides sustained a back injury during patient lifts or transfers. The participant who sustained a brain injury did so as a result of a fall in the workplace.

A brief summary of each participant's responses is given in Table16.

Table 16 Participant Descriptions

Participant	Occupation	Injury	Information	Input	Choices	Decisions
A.	Supervisor	Back injury	None offered; initiated calls to occupational health & administration -trust and information sharing present between worker and health care practitioner	Took initiative to call key people to tell them what s/he needed	Not offered choice re: RTW but made choice re: graduated hours	Made decision to modify work environment for his/her situation and future injury prevention
B.	Nurse	Head injury	Offered neuropsychological assessment by WCB; information from physician deemed okay; no information offered or readily available from employer re: RTW	Wants to have input into a RTW plan but has not begun the process; was not contacted (at time of interview) by employer re: RTW plan or process		Would like to be an involved active part of RTW planning, not yet at that stage of recovery
C.	Health care aide	Back injury	Did not readily receive information from physician; had to request results of tests and request rehabilitation intervention. Information regarding the RTW time schedule (from employer) regarding RTW was given via telephone	Asked for and received rehabilitation intervention; was not invited or given opportunity for input into RTW plan; was simply informed what it was going to be.	No options given to have a choice in the RTW plan, either in design nor in time scheduling	Did not feel that s/he was invited to participate in decisions
D.	Health care aide	Back injury	Information adequate; since worker had been through the RTW process before, s/he knew what to expect; was called by employer to come to meeting with employer and WCB to discuss RTW plan	During meetings was invited to express feelings & thoughts about how s/he is doing & what s/he needs; expressed "they" do not take anything s/he says into account when planning RTW. Is taking initiative to present own needs & plans to persist with request for permanent job accommodation since s/he feels entitled to such.	Feels s/he is given extremely limited choices; i.e. RTW plan is presented to her as "given"; his/her input is not integrated into RTW plan.	

Participant	Occupation	Injury	Information	Input	Choices	Decisions
E.	Health care aide	Shoulder/ arm injury; carpal tunnel syndrome	Information regarding diagnosis unsatisfactory & personally demeaning from one physician & specialist, especially with regard to cause of injury; feels this resulted in loss of injury claim acceptance; new family physician supportive and informative; injury claim initially accepted, then rejected; not informed with regard to options for appeal; after persistent searching, was referred to workers' advocate office	Initiated contact with employer, WCB and the employment insurance office regarding possibility of RTW program; did not succeed nor find support in efforts. Concluded that RTW assistance was available only to workers covered by WCB	Did not feel there were any choices open except to wait for the appeal process	
F.	Health care assistant	Carpal tunnel syndrome & environ-mental allergies	Was informed about treatment options for CTS at time of injury (15 years previous); chose to wait on surgery until 2 years ago- then informed it would not be covered by WCB. Feels information regarding cause of CTS given by specialist was uninformed re: work-related injury	Has taken every opportunity to have input into RTW plan; was persistent with request for ergonomic evaluation and changes; Feels environmental allergies have not been treated as credible by employer and requested ergonomic and environmental changes have not taken place.	Chose to change job positions rather than persist with request for ergonomic and environmental changes	Limited decisions because all efforts to facilitate policy changes regarding environment allergies were resisted by employer

3.2 Themes and Issues

A framework developed by the researcher and based on a continuum of worker participation from receiving information through decision-making (Cormier, 1997; Rooney, 1988 & 1992) was applied to analysis of the qualitative interviews for worker participation in RTW (Figure 4, Chapter 2). In this model, the lowest level of worker participation was viewed as workers receiving information about their health and about the process of RTW. The next level of participation was the presence of opportunity for workers' input into the management of their physical or mental health and the RTW process. The input could take place through formal means (i.e. a RTW coordinating team) or via informal means through conversations with personnel such as the physician, occupational health nurse, or supervisor. The third level was defined as one in which the workers could exercise real choice, given more than one option by the employer and/or the insurer. The choices given to the worker could apply to the timing or the type of rehabilitation intervention, or to the plan and/or implementation for RTW. Decision-making was interpreted to include any aspect of planning and making decisions about the type of RTW program, its timing, ergonomic or other job accommodation needed by the worker, as well as the concept of input such that the worker's input was actually integrated into designing the RTW process (Figure 4, Chapter 2).

Other themes emerged from the data that related to earlier research describing barriers and facilitators in RTW (Friesen et al., 2001, Figure 1, Chapter 1). Both models were used as structures for the organization of themes and issues arising from the interview data.

3.2.1 Information theme

Two information sub-categories were identified as information about the injury or medical condition and information about the RTW plan and process. Information was determined to be either readily available or offered by the health practitioner, insurer, and/or employer, or to require some worker initiative in requesting or searching out the information. Workers' experiences encompassed an easy sharing of health information based on a trust relationship the worker had with the health practitioner to one in which the worker was obliged to request information about test results, experienced delay in getting the information, and was required to initiate a request for rehabilitation intervention. Workers also expressed that another aspect of information concerned the physicians' conclusion about the cause of injury, especially carpal tunnel syndrome. The workers felt that the physicians' conclusions were either mistaken or misinformed and resulted in subsequent loss of WCB coverage for the workers.

Information about the RTW program was readily available for one participant, offered to another following the acute phase of the injury, given in response to requests, not yet discussed with one, and unavailable to another. In one case where information about RTW was readily available, it should be noted that the worker had prior experience with a RTW program and the worker's knowledge of the process came at least partially from past experience.

3.2.2 Worker input theme

The second major category – worker input into the RTW plan and/or program – appeared to be a structured part of one worker's experience, i.e. the employer's normal procedure in setting up RTW plans. This worker (D.) was invited to team meetings with

the employer and WCB and asked for input into how s/he was feeling and what was needed in the RTW program. The worker indicated to the interviewer that the input was subsequently not considered in the design of the plan, that "they talked about accommodation" but did not actually do anything about it. Another worker (A.) acted as his/her own case manager and was able to clearly and assertively express the type of modified work and ergonomic changes that were required, and then was able to obtain support from the health care practitioner and someone in the workplace to carry out this plan. A. indicated that this was possible because s/he had a supervisory position and because s/he was "that kind of person". Another worker (C.) was not invited nor given opportunity to have any input into setting up a RTW program, nor was this worker asked for feedback on how the RTW plan was progressing. C. expressed to the interviewer that s/he did not feel the RTW plan was preparing her/him adequately to go back to the job as there had been no opportunity to work on a regular or usual shift nor had there been any lifting and transferring tasks during the gradual RTW period. Another worker (F.) took the initiative in all interactions with the occupational health nurse, the supervisor, WCB, co-workers, even going to the extent of consulting an outside expert on environmental allergy concerns. E. attempted to design and plan a RTW program for her/himself but was unsuccessful in obtaining assistance from the employer, from the employment insurance office and from the physician.

3.2.3 Choices theme

With the exceptions of A., who created his/her own opportunity for choice in design of a RTW program, and E., who took control over determining the number of hours in a graduated RTW program, the workers felt they were not given any true choice

in the design nor timing of a RTW program. They were also not given an option to consider a permanent job accommodation. The employer, WCB, and the lack of coordination and support within the "systems" (e.g. the insurance system, workplace system and the healthcare system) were seen to be responsible for the limitation or absence of choice. E.'s disappointing experience in trying to get the insurance, health, and workplace systems to help her/him get back to work illustrated clearly the lack of coordination and teamwork among the key players in the RTW process. B., who had not yet begun a RTW program, expressed that s/he would like to be an integral part of the planning and design of a RTW program. B. described the need for being part of the process as the need to be empowered for taking control of his/her life. F., although very active in approaching key people to facilitate the RTW process, felt s/he was left with very limited options for permanent job accommodation and in the end chose to change job positions rather than to keep pushing for accommodation. D. also felt that choices for permanent job accommodation were not being made available and could be an option only if s/he, the worker, was strong enough to persist in the demand for such accommodation.

3.2.4 Decision-making theme

The levels of choice and decision-making tended to become blurred since neither level of participation was clearly available to the participants. None of the participants felt that they were offered opportunity for full participation in designing and implementing a RTW program. A. felt s/he was able to make some decisions about the RTW program and make some permanent ergonomic changes in the workplace only because s/he held a supervisory position and was assertive enough to ensure his/her needs

were taken into account when s/he came back to work. F. felt s/he was forced into a job change because of the lack of cooperation from the employer in making ergonomic changes in the previous job. E. felt s/he was going to be forced to make some decision about a job change because of being unable to obtain any support or help to return to the previous job.

3.2.5 Other themes

3.2.5.1 Lack of teamwork. In most cases the occupational health nurse (OHN) was the "point" person to give information and to plan the RTW program. In two cases the OHN called the workers to initiate RTW plans. In one situation the RTW plan consisted primarily of giving the worker a pre-determined schedule of gradually increasing hours with no other discussion or meeting with the OHN, supervisor or WCB. In three instances WCB was not involved in planning, implementing, nor following up the RTW plan. In one case WCB had been in touch with the worker to recommend an assessment procedure; in another case WCB was not involved except to pay the benefits, and in the third WCB carried out three investigations before they accepted the claim but were not involved in the RTW plan or process (C.). Only in one case was the worker invited to a team meeting at which WCB was present to make a plan for modified tasks and hours in RTW. The lack of teamwork was sometimes considered to be the fault of the supervisor or the occupational health nurse. None of the participants expressed satisfaction with the level of cooperation among the people involved in the RTW process.

3.2.5.2 Need for an advocate or RTW coordinator. All participants expressed the need, directly or implicitly, for an advocate or coordinator within "the system" to help with getting information as well as mediating or negotiating the plan especially between

worker and supervisor. Participants appreciated having information offered to them – in written or oral form. The participants indicated there was generally a lack of opportunity to have input into the RTW plan. It was expressed that if the participant was the kind of person who could be assertive and knew what was needed, there was a possibility for the RTW plan to succeed. However, participants felt at a disadvantage because of the fear of conflict with the supervisor and the potential for negative impact on job security. Included in the need for a RTW coordinator was the need for someone to monitor the worker during the gradual RTW phase of their RTW program to make adjustments to the plan and/or to mediate in relationships with the supervisor.

3.2.5.3 "They don't want to give up control". Although two workers experienced a "more or less" successful RTW, all workers felt there needed to be some changes in the "system". All workers indicated that they would like to have more "real input" in designing and implementing their own RTW program and that the "system" should make opportunities for that to happen. One participant expressed that s/he felt the employer liked to talk about accommodation but in reality was not open to making real changes because, "they don't want to give up control". One participant indicated that s/he did not think s/he could ask for any changes, but expressed that "it would be good" to get some assistance to modify the RTW program to better fit his/her needs. Other participants expressed that there should be "some resource available at the workplace" to help workers get back to their job. One individual expressed that s/he had done as much as s/he could to try to change the work environment and that the employer was not "holding up its end" in facilitating ergonomic or environmental job accommodations.

3.2.5.4 Novice versus experienced injured worker. It was apparent that workers who were more knowledgeable than others about the process of RTW were also more assertive in seeking modifications to their RTW plan or seeking changes in the workplace environment. Past experience obtained during a previous injury appeared to contribute in making the worker aware of what was possible in a RTW program and more aware of the employer's responsibility to make necessary job accommodations. The workers' awareness of what was possible and of their rights appeared to result in greater assertiveness in speaking for themselves.

3.2.5.5 Lack of respect for the worker. Participants indicated that in at least two cases, health practitioners demonstrated a lack of respect for the worker in the manner in which they relayed diagnostic information, i.e. "you have carpal tunnel syndrome because you are female, overweight and you have had children", with no apparent credence given to the worker's injury having been sustained in the workplace. In another instance, the participant stated that the WCB staff person was "lazy" and benefits had been withdrawn because the staff person was not doing a good job. One worker expressed that, although s/he was able to speak up for him/herself, all injured workers felt very vulnerable and needed support from their workplace, not criticism or resistance when ergonomic modifications were suggested.

3.3 Summary of Themes

In summary, participants experienced some elements of receiving information, having input into a RTW plan, and having a small measure of choice or decision-making power to create change in the workplace. However, none of these elements in the continuum of worker participation appeared to be experienced by all and participants expressed disappointment or anger about their lack of involvement or the lack of support or consideration they received from the insurance company and/or from the workplace.

Issues about "lack of teamwork", feeling "disempowered", and the need for trust and respect are also themes that were expressed by workers in an earlier study about the barriers and facilitators experienced in a RTW program (Friesen et al., 2001). However, the concept that workers had to have "experience" in order to become knowledgeable and assertive about their rights in a RTW process is a new insight that highlights the gaps in the current RTW process.

CHAPTER FIVE DISCUSSION

1.0 Discussion of Findings from Employee Data

1.1 Exploratory Analyses

1.1.1 Description of employees

Based on occupational groups, respondents to the employee survey showed no significant differences in the history of time-loss injuries, age, family status, salary or educational level. The majority of respondents was female, an expected finding among healthcare workplaces (Chung, Cole & Clarke, 2000), and was within the age category of 40 or older (60%). This is a population that may be at high risk for work injuries because of their age. According to Health Canada (2002), McIntosh et al. (2000), and Tate, (1992), older workers are likely to have longer duration of time-loss injuries than younger employees due to the need for a longer healing time and, being more likely to be less physically active, they may also be more likely to sustain injuries. On the other hand, the literature that the age of workers did not have any relationship to the length of work-related disability (Feuerstein & Thebarge, 1991), that older workers may experience a lower number of injuries

Nurses were the most widely represented occupational group, reported the highest salaries, and along with the "other professional" group, reported the highest educational levels, one of the variables associated with worker participation. Nurses appeared to have the greatest sense of worker participation in their workplaces – scoring higher on the involvement and the peer cohesion scales than other workers. Nurses and health care aides appeared to represent opposite ends of the job spectrum in this study. Nurses had

higher salaries, more education, participated more in their workplaces (i.e. higher level of autonomy and peer cohesion). Health care aides, on the other hand, worked in the community and in personal care homes, had a lower education, lower salaries and did not participate in their workplaces to the same extent.

1.1.2 Fit with the Model of Worker Participation and RTW in the Workplace

The exploratory factor analysis supported the multi-system model of worker participation and RTW in the workplace in that a pattern of multi-system factors was identified as part of the model. These included workplace safety issues, issues concerning a people-oriented environment, a variety of worker characteristics, and organization workplace characteristics such as the type of healthcare facility, whether hospital, community or personal care home.

The self-efficacy score was similar for the majority of employees (68%) who scored 3 or 4 on a scale for self-efficacy that ranged from 1 to 4. Self-efficacy did not prove to be an important aspect of worker participation as it did not show a strong enough association with any of the worker participation variables in the initial bivariate correlation analysis (i.e. to be included in subsequent analyses). However, since self-efficacy was found to have a low-strength but significant positive association with autonomy, one of the variables used to describe worker participation ($p \leq .05$), it is suggested that a more discrete measure of self-efficacy could be used in future study concerning self-efficacy and worker participation.

1.2 Predictors of Worker Participation in the Workplace

Worker participation in the workplace is described in terms of two components — commitment or inner motivation of the worker to be involved in workplace activities, and structure, or structured opportunities in the workplace that facilitate workers' involvement.

The presence of commitment in workers' participation may be predicted by a wide range of worker and workplace characteristics—the strongest predictor being a people-positive environment. The finding that a people-positive environment is important to commitment of workers highlights the importance that workers place on being valued and respected by their employers. This finding was affirmed by the interview participants in this study who spoke in a variety of ways about the importance of being respected and valued by their employer: i.e. "...there really needs to be some support... to say they value their workers...". Albrecht et al. (2001) in their report on workers' perceptions of the workers' compensation system also highlighted the importance that workers placed on being understood and respected by their employers. Pransky et al. (2001) found that retraining supervisors' attitudes toward being more open and positive toward injured workers resulted in greater success in RTW. Foster-Fishman and Keys (1997) also discuss the importance of having a climate of trust and respect to facilitate the development of worker empowerment.

The literature suggested that both worker participation in the workplace and a positive safety culture are associated with reduced work injury costs (Shannon et al., 1997). The current study shows that safety culture is predictive of both commitment and structure in worker participation, supporting the association of safety culture and worker

participation. By definition, structured worker participation is intended to foster a safe workplace climate through safety training or through the activities of the joint workplace health and safety committee. Increased worker participation in the workplace–especially through these structures–appears to be indicative of a safe workplace and subsequent reduced workplace injury costs (Melnik, 1990; Shannon et al., 1996, 1997). Safety in the workplace and workers' participation in safety practices is an association that is most clearly exemplified by the structure of the joint workplace health and safety committees that are mandated by legislation for any workplace with 20 or more employees. Although the effectiveness of these committees may vary from one workplace to another (Lewchuk et al., 1996; O'Grady, 2000), they appear to be effective in facilitating participation by workers in safety activities in the workplace. Further research is needed to establish a direct link between worker participation in the workplace and workplace injury costs. This may be carried out by direct measurement of worker participation (developing and using a construct-specific questionnaire) and analyzing the relationship to the overall costs of work-related injuries.

The "type of workplace" is predictive of both aspects of worker participation (structure and commitment). This factor score variable reflects whether a workplace is a hospital, community facility or personal care home, and also reflects characteristics such as the occupation of the greatest number of employees in a particular workplace (i.e. nurses) and whether employees experience work pressure within their workplace. It is suggested that this factor (type of workplace) needs to be further deconstructed to identify whether it is an organizational framework, a managerial style, or an aspect of workplace culture that contributes to the factor. While workplace culture (i.e. people-

oriented environment and safety culture) clearly has an impact on the extent of workers' participation, as evidenced by the findings in this study and other studies (Habeck et al., 1993; Hunt et al., 1991), it is suggested by the writer that the "type of workplace" in this analysis reflects the loading of variables other than those that describe the culture or environment of the workplace.

Occupation (a factor score variable that is also loaded by salary and education variables) is also predictive of greater commitment in worker participation. Nurses are the major occupational group represented in this study and they are also the most educated and most involved. Moos and Insel (1994) found that nurses tended to score high in involvement and peer cohesion, two variables that describe worker participation.

The "injury" factor was found to have a negative predictive relationship with commitment, that is, having a workplace injury might contribute to decreased participation by workers in the workplace. This finding was supported by the interview participants (from the qualitative data) as workers who experienced a time-loss injury expressed a feeling of being "outside" the workplace and isolated. This is an apparent contradiction with the results reported in Table 9 (chapter 4) where labour-management cooperation was found to be the only single variable that was significant when comparing worker participation between groups of workers without injury and those with time-loss injuries. It is suggested that injured workers may be minimally involved with the occupational health department in a workplace, a finding which would account for the relationship between labour-management cooperation and injured workers. On the other hand, the finding of a negative predictive relationship between workplace injury and commitment may suggest that workers who become injured are already less participative

in the workplace and their injury exacerbates the sense of isolation. These relationships need to be examined in greater detail in future studies.

Workers' participation as part of structured involvement was best predicted by a strong safety culture as well as a people-positive environment, type of workplace, and managerial control. Managerial control is associated negatively with commitment in workers' participation but positively associated with structured worker participation. The positive influence of increased managerial control may be one of ensuring that more (rather than fewer) structures are present in the workplace overall, including the structures that facilitate worker participation. Such managers may also enforce requirements concerning participation in programs such as safety training programs. Formal structures, including legislation, apparently have a measurable effect on workers' activities and behaviours in the workplace. Lewchuk et al. (1996) found that safety practices and activity of the joint health and safety committees in Ontario workplaces were overall increased following legislation that mandated the set-up of joint labour-management committees.

The negative influence of increased managerial control, however, may be one that detracts from workers' sense of commitment and internally-motivated participation in the workplace. Karasek and Theorell's (1990) demand-control theory of workers' health supports the concept that increased managerial control results in reduced autonomy for individual workers which then results in increased health risks.

Overall, these findings may suggest that personal characteristics of workers (hypothesis #1) have less impact on whether or not workers participate in their workplace than do workplace environment characteristics (hypothesis #2) that reflect a positive

safety climate with structures in place that facilitate worker involvement in safety and RTW practices.

1.3 Worker Participation Differences Among Groups

Approximately 20% of employees that were surveyed had received a time-loss injury lasting at least three weeks. These workers tended to be somewhat older and had more years of work experience (mean age = 51 years). They did not, however, differ significantly from workers with no injury or less than three weeks time-loss injury in terms of worker participation factors of structure and commitment. However, a significant difference was found in labour-management cooperation (one of the variables describing structured worker participation in the workplace) among employees with no injury compared to employees with injuries — both those with less than three weeks' time-loss and those with three or more weeks' time-loss (see Table 9.1, Chapter 4). This suggests that workers with injuries tend to have more safety concerns or involvement with a RTW program that involves both labour and management. However, the lack of difference between time-loss injuries lasting three weeks or longer and those that last less than three weeks suggests that either time-loss duration is not as important as having an injury versus not having an injury, or that a three week time-loss duration is not a long enough time-loss period to make a difference in worker participation.

On the other hand, differences in both aspects of worker participation in the workplace — commitment and structure — were found among employees based on the type of workplace, whether hospitals, community workplaces, or personal care homes. The pair-wise analysis suggested that differences lay primarily between hospitals and other workplaces. When the individual worker participation variable differences rather

than the factor score variables were examined, the greatest differences were found to be in safety training, labour-management cooperation, involvement, and peer cohesion (Table 9.2, Chapter 4). Although it seems apparent that the type of workplace has an influence on the level and the quality of worker participation, the specific characteristics in workplace culture and their influence on worker participation need to be tested in further studies.

2.0 Discussion of Findings from Manager Data

2.1 Type of Workplace and Average Duration of Time-loss Injuries

Workplaces represented by the WRHA manager survey were divided into groups of hospitals, community facilities and personal care homes.

No significant differences were found between average duration of time-loss injury and the type of workplace (hypothesis # 5a). There were also no significant differences in costs of WCB premiums among the three types of workplace (hypothesis #5b). This suggests a marked similarity among all types of healthcare facilities in Winnipeg with regard to average duration of time-loss injuries and costs related to workplace injury. However, since there were differences in the workplaces with regard to safety practices such as safety diligence, safety training, and safety leadership, it may be that a further study is needed that would examine specific costs related to injury to determine whether any real differences exist. It is also suggested that differences might become evident if the comparison was made between the workplaces with the "highest work-injury cost" and those with the "lowest work-injury cost".

Differences in workplaces with regard to safety concerns and labour-management cooperation may be explained to some extent by the great range in the size and resources

of the facilities represented in the sample. That is, hospitals are generally larger and have more developed organizational departments and programs such as the health and safety department and committees. Community facilities are generally smaller, have fewer levels of organization and often have fewer resources to establish health and safety committees or develop regular safety training programs. This is supported by findings from the WRHA occupational health needs survey (Cousins, 2002, personal communication). It is also supported by Betcherman, McMullen, Leckie and Caron (1994) who found that formal employee participation programs were more likely to be present in workplaces that had 250 or more employees.

2.2 Predictors for Average Duration of Time-Loss Injury

Results of a multivariate regression analysis showed that the major (negative) predictor of duration of time-loss injuries within the WRHA was a people oriented culture (hypotheses #6a and #6b). All other workplace characteristics as well as the worker participation characteristics did not predict the outcome for average duration of time-loss injury. This finding highlights the importance of qualities of a people-oriented culture such as trust and respect for the worker as well as clear and open communication. Foster-Fishman and Keys (1997) described the need for mutual respect and trust between managers and workers, citing it as a pre-condition for workers' empowerment. Pransky et al. (2001) found that training supervisors in how to respond to injured workers resulted in improved outcomes for RTW. It is suggested that further research could be valuable to identify specific qualities and aspects of a people oriented culture that are important to facilitate successful RTW, thereby reducing costs related to work injury.

2.3 Predictors for Cost of WCB Premium

Results of a multivariate regression analysis showed that the major (negative) predictors of cost of WCB premiums within the WRHA were the two worker participation variables of labour-management cooperation and safety training (hypotheses #7a and #7b). This suggests that the greater the worker participation, the lower the cost of WCB insurance premiums. No workplace variables were predictive of the cost of WCB premiums. As the cost of WCB insurance premiums is a somewhat crude indicator of the overall costs of workplace injury, it is suggested that further study is needed concerning the relationship between worker participation and a range of indicators for workplace injury costs.

Although the duration of time-loss and the cost of WCB premiums were viewed as two aspects of the outcome variable of work injury costs, results of the prediction models suggest there are different predictors for each aspect. It is suggested that further study is needed to analyze the relationship between worker participation and the various aspects of work injury costs.

3.0 Understanding the Nature of Worker Participation in RTW

The nature and current practice of worker participation in RTW were explored through the qualitative worker interviews. Four of the six workers who were interviewed apparently experienced some level of participation in the RTW process although the level of participation and the quality of worker involvement were far from satisfactory for any of the workers. The framework for analysis of the interview data based on levels of worker participation as information, input, choices and decision-making (Figure 4, Chapter 2) was found to be useful. However, an expanded framework or model for understanding the nature of worker participation in RTW is proposed (Figure 9).

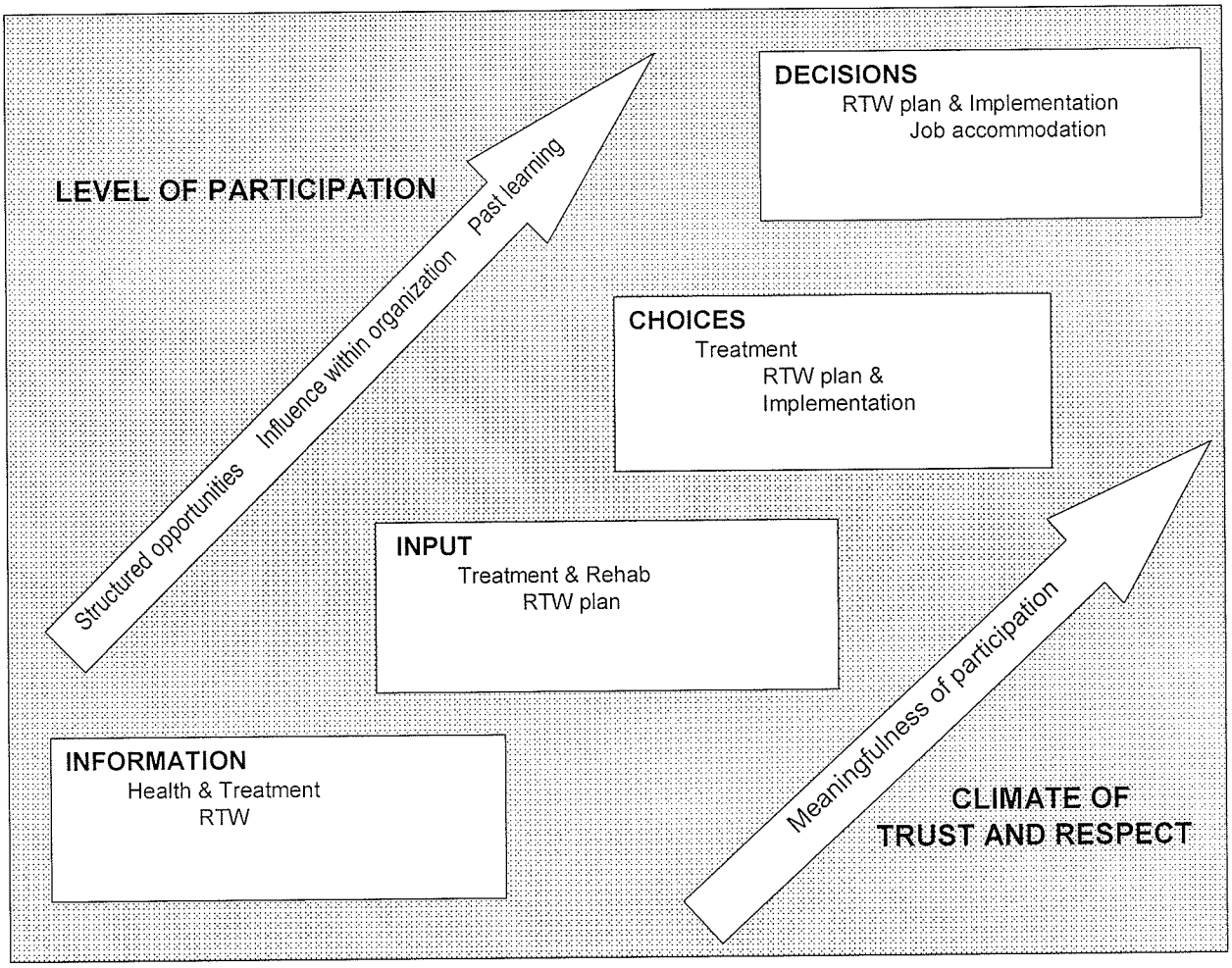
3.1 Workers' Influence in the Workplace and Meaningful Participation

As found by Cormier (1997) and Rooney (1992, 1995), and stated by Tomer (1988), the worker's level of decision-making power within the organization was an aspect of worker participation found to be important for initiating and implementing changes in the workplace. The worker who indicated s/he was able to implement and initiate changes because of the level of influence s/he held within the organization gives further support to this premise:

> "I'm very lucky because number one, I have a position of authority…it wouldn't be a pleasant experience for most people because there's no support from anyone".

The level of influence is apparently a result of the employee's position in the organizational hierarchy of the workplace. It is suggested that a worker's "interpersonal" influence as represented by a strong sense of self-efficacy and empowerment is another aspect of influence that needs further study. A worker's influence may also be enhanced in a workplace environment that encourages workers to take initiative and risks and participate in a more meaningful way in workplace activities, as has been suggested by Foster-Fishman and Keys (1997).

Figure 9 A Framework for Understanding the Nature of Worker Participation in RTW



This study found that participants wanted to be involved in the RTW process but the involvement needed to have some "real" effect (Bernstein, 1976; Cormier, 1997). That is, if input was solicited, workers wanted that input to be reflected in the design and implementation of the RTW plan. Having ready access to complete information about the rights and responsibilities of the injured worker and the RTW process was very important to workers' sense of being "in the loop" and feeling part of the process. Workers also indicated that having opportunity for input was important to being involved in RTW, and having their input integrated into the design and implementation of the RTW plan was critical to their sense of being valued and being truly involved in the RTW process. Bernier (1976), Cormier (1997) and Rooney (1992) pointed out the need workers had for participation in the workplace to be "meaningful" or "intensive".

The workers who were able to initiate information-gathering or be assertive in expressing their needs for job accommodation or an ergonomic assessment were individuals who either had previous experience of a RTW program or were in a position with some authority to influence changes in the workplace. This phenomenon calls into question whether there is meaningful participation for workers who do not "know the ropes". Although one participant was very assertive in expressing his/her needs, s/he commented that it still felt as though there were some important things missing in the information s/he was able to gather. The employer was often viewed as being unhelpful in arranging a RTW program, not communicating or even keeping back information from the employee.

Both the employer and WCB were perceived as giving lip service to having workers involved in a meaningful way in the planning and in implementation of a RTW plan, but not following through with integrating any of the workers' suggestions or their expressed needs into the RTW plan. Participants commented that the employer and WCB in reality did not want workers to have choices or to be involved, rather "they wanted to keep the control". Participants were critical of the lack of commitment they experienced when they were seeking accommodation for return to a permanent job, rather than short-term changes that lasted only as long as the RTW program.

3.2 The Importance of Trust and Respect

Workers in this study appeared to expect consideration and assistance from their workplaces to RTW and also appeared to start out with full confidence that their employers would "do the right thing", only becoming disillusioned and distrustful when experience showed them that the RTW process was fraught with delays and poor communication from employers and from WCB. The employer was often viewed as being unhelpful in arranging a RTW program, not communicating or even keeping back information from the employee:

> "There was minimal or no communication from the [employer]."
> "Human Resources [doesn't] tell you these things."

The theoretical framework suggested that meaningfulness in participation would increase with greater involvement in decision-making. Findings from the interviews did not bear this out. Participants neither expected nor wanted full participation in decision-making that concerned the workplace; more importance was placed on being respected and valued for themselves and their contribution to the

workplace. Following a workplace injury, workers wanted to be given complete and accurate information about their rights and responsibilities concerning RTW and job accommodation. They wanted to have their input seriously considered in planning and implementing their RTW program. A basic level of respect for the worker, the worker's input, and the worker's need for full and accurate information appears to be a necessary foundation for worker participation to be meaningful. It was noted that being asked for input was apparently not perceived as genuine participation unless the workers could see that their input was seriously considered and integrated into the subsequent RTW plan, another evidence of respect and value for the worker. As expressed by one worker, "They pretend they listen but that's it." Another participant observed:

> "...there really needs to be support from our [workplace]. To say we value our employees, what do you need from us? Nobody knows that you're away, that you're injured; nobody knows what the process is. You know, it would help if the [workplace] has something that said, you know we don't want you to be on WCB, but if you are, here are some things that you can do."

The above quote suggests that "meaningful" participation means that not only is workers' input into programs such as RTW incorporated into subsequent RTW plans, but that both workers and managers have a measure of respect for and trust in each other.

It is suggested that outcomes of the RTW process are best understood in a paradigm of "relationships in context...the relationship dynamic occurring between the worker with injuries and the system..." (Kenny, 1995, p. 55). Sinclair, Sullivan et al. (1995) understood this relationship dynamic when they referred to an unsuccessful

RTW program as "a failed social transaction". Foster-Fishman and Keys (1997) support the importance of the relationship dynamic, stating that basic trust and respect need to be present on both sides of the relationship between management and workers in order for meaningful worker participation to occur.

3.3 The Learning Curve in Worker Participation in RTW

A "new" finding about worker participation is that workers can learn from past experience how to participate more effectively in their RTW program. Workers who had past experience of work injury and RTW expressed they were able to be assertive and "participate" in the RTW process because they already "knew the ropes", were more aware of their rights as a worker, and were more willing to risk making requests and/or demands regarding job accommodation. Mitchell et al. (1990) suggested that workers could learn to become more self-efficacious but that this was facilitated by how workplaces and insurance and/or healthcare systems structured the RTW process. It would appear that workers have some responsibility to become informed and to learn how to be assertive in the RTW process but that workplaces have a responsibility to facilitate these behaviours (Mitchell et al., 1992; Walker, 1992; Rest, 1996). It is also suggested that the workers' "right to know" could be facilitated by workplaces by offering guidance and adequate information to assist the worker through the RTW process (Manitoba Workplace Safety & Health Act, 1987).

3.4 Structure Facilitates Participation

Findings from the qualitative analysis suggested that workers tended to participate in their RTW program to a greater extent when they were given opportunities to do so, either through formal means such as meetings of the RTW

team or through informal invitations to offer opinions and information. Alternatively, workers generally were unable or unwilling to participate in the RTW process without structured opportunities. For example, when interview participants were not asked (by the RTW coordinator) about ergonomic needs or about their gradual RTW program, they indicated that they had no input into the plan; they simply had to accept the process or plan as given or dictated to them, and cooperate to the best of their ability. One participant expressed concerns to the interviewer about the lack of relevance in the RTW program, but apparently did not feel free to ask his/her RTW coordinator for specific considerations on preparing for the job nor was this participant invited to have input into how the RTW program was structured.

4.0 Re-visiting the Multi-system Model of Worker Participation in RTW in the Workplace

Contrary to the theoretical model of worker participation and RTW in the workplace (Figure 3, Chapter 2), the worker did not remain within the "more or less" safe system of the workplace with support and communication networks intact. Instead, he or she was thrust outside the workplace immediately subsequent to the injury, and expected to interact with the insurer system and the healthcare system as well as to maintain communication with the workplace, more or less on his/her own initiative (Figure 10). If there were no structured or even informal systems of cooperation or communication in place, workers were left on their own and could fail to negotiate a return to the job.

Thematic analysis findings suggested that the injury and its consequent impact on the worker and on other systems was an event that precipitated the worker's

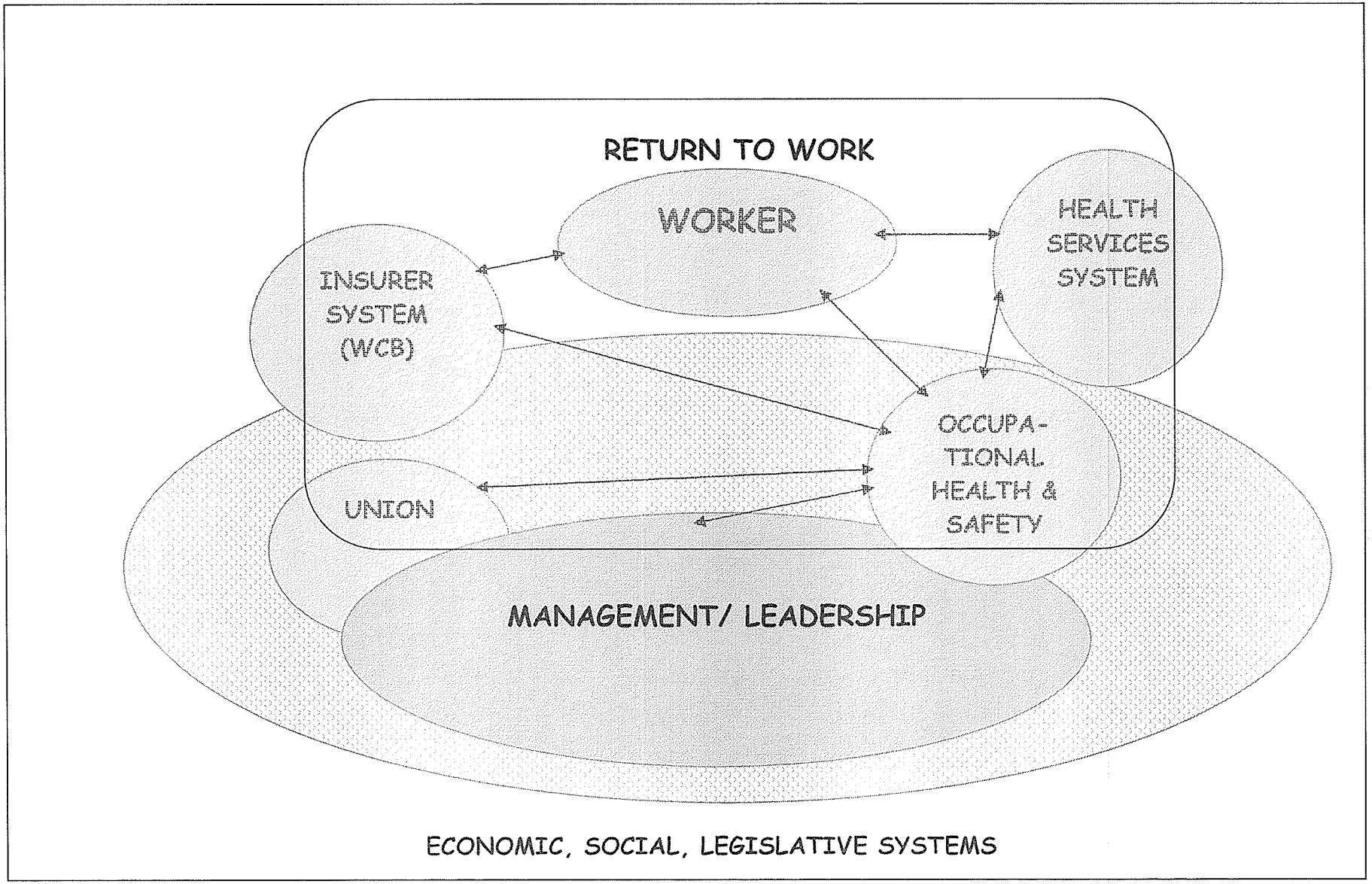
involvement with previously inactive systems (with regard to the individual), namely the health care system and the insurance (WCB) system. The injury also required the worker to initiate or respond to communication with at least two "sub-systems" in the workplace that may or may not have been part of the worker's involvement prior to the injury, i.e. occupational health and union representatives for occupational health and safety and RTW. It is suggested that workers may not initially "seek out" participation or involvement in the RTW process, rather the process has overtaken them and they need to participate to some degree in order to recover and be able to return to their jobs.

It is apparent that a cooperative team approach in RTW in which the worker is a key participant is more of an ideal than a practical reality in most workplaces. Although researchers and disability management specialists have demonstrated the economic and social value of implementing RTW programs that operate as a team, communicate regularly and above all, involve the worker as a key participant (Frank et al., 1998; Sinclair, Sullivan et al, 1995), the reality is often one of poor communication among team members and non-inclusion of the worker in the planning and design of the RTW program. WCB and the workplace may not be working cooperatively for the worker's benefit, and physicians may be supportive from a distance but rarely involve themselves directly in the RTW process (Yassi et al., 2002).

Workers expressed a need for an "advocate" or coordinator to help them negotiate their way through the healthcare, insurance, and the workplace systems in order to be successful in moving from a "patient" to a returned worker. The revised

model places this advocate within the occupational health and safety department; however, it could potentially be another identified person within the workplace. This advocate/coordinator should be able to assist the returning injured worker to work with the various departments and personnel within the workplace such as the managers and supervisors, union representatives, and co-workers, as well as help the worker to obtain appropriate services from the healthcare and insurance systems. It may be argued that the model should allow for an advocate/coordinator such as a case manager working from outside the workplace system on the worker's behalf. However, it is suggested that since the workplace environment is critical to facilitation of workers' participation in the workplace and in the RTW process, the assistance to RTW should be coordinated from within the workplace. Further study is needed to identify the type of support that is required from the workplace system, how to make the communication linkages work in "real life", and how workers need to be involved in the RTW process in order to facilitate successful RTW.

Figure 10 Revised Model of Worker Participation in RTW in the Workplace



Theoretical models of RTW found in the literature (Franche & Krause, 2001; Friesen et al., 2001; Sinclair et al., 1995; Yassi, 2000, personal communication) have placed the worker at the centre of the model, intimately involved with all the systems and sub-systems involved in RTW. Findings of this study suggest that this is not reflective of actual practice nor does it accurately depict the worker's relationship with all the stakeholder systems and sub-systems. In actual fact, the worker is expected to function from outside all the systems. The network of communication and cooperation is often inadequate to support the worker in the RTW process although the worker may make a great effort to get the systems to work together and work with him/her.

Although workers expressed the importance of their own involvement in the RTW planning and implementation (especially with regard to information and input), it may be that worker participation is non-functional or absent without a structure of communication and cooperation in place that facilitates the movement from injured worker (i.e. patient) to recovering worker to gradual return to the job or to an accommodation in the job. Albrecht et al. (2001) in their participatory research project with injured workers in Ontario appeared to support this conclusion. They concluded that although input and control over decisions were important for workers, access to information, improving the quality of interaction with injured workers, and exhibiting trust and understanding were vital to the success of RTW.

The "readiness for RTW" model proposed by Franche and Krause (2002) appears to have potential for considering the worker's involvement, although the model needs to be tested. However, this model, while putting the worker as the key change agent, does not indicate how the worker's readiness to change and make decisions actually occurs. It

is suggested by the writer that workers' participation in the workplace and in RTW may be key to preparing workers to make decisions to RTW.

5.0 Limitations of the Study

5.1 Limitations of the Employee Survey

This study focused on the role of workers and workplaces in the RTW process and did not examine the role of the healthcare system nor the insurance system in worker participation or RTW. As revealed by responses of the workers in the qualitative interviews, the healthcare system and the insurance system have considerable impact on workers' experiences in participation in the RTW process. Further research that examines the influence of these "outside" systems on the workers' participation in the RTW process is needed.

The low response rate in the employee survey limited the potential for generalizing the findings. The respondents may have contributed to bias in a number of ways—they were primarily nurses and they were volunteer respondents (Aday, 1996).

An overall weakness of the study was that there were no linkages established between the workers and the workplace nor a means of identifying respondents with non-respondents. This made it impossible to link actual claims injury data for each workplace in order to analyze the relationship between worker participation and cost of work injury. Although confidential identifiers could have been used that would have allowed linkage of respondents to their workplace, this was not done due to concerns that requesting this might have hindered the support for this study by the union groups who insisted that no means of identification should be placed on the survey form. In retrospect, the researcher would have tried harder to engage the cooperation of the unions—perhaps by giving

more detailed explanations of the value for usage of confidential linkages and giving examples of other studies that have used such linkages. Future studies should attempt such linkages as it would allow much stronger analysis.

5.2 Limitations of the Manager Survey

The major limitation of the manager survey analyses was the low "n" in each of the groups (i.e. hospital, community workplace, and personal care home) that limited the power to detect possible real differences in the average duration of time-loss injuries or in the costs of WCB premiums. There was a wide range of variability among the facilities, both within-groups (e.g. different types of community facilities) and between groups, as well as in size and in type of care that was offered. Workplace facilities that employ a large number of workers, such as hospitals, might differ considerably from one department or unit to another department or unit. Real differences between units within a group or between the groups may have been obscured because each workplace was considered as one entity despite possible internal differences. In order to obtain more specific information concerning workers' participation in the workplace and in RTW within the WRHA facilities, it is suggested that comparisons be studied between workplaces that have very low and those that have very high average duration of time-loss injuries, comparing worker participation against work injury costs.

Although the same tools (i.e. the OPP-E and the OPP-M) were used, the study could have been strengthened if direct comparison of responses in the employee survey were made with responses in the manager survey, especially with respect to workplace characteristics. A future study should plan for a design that would facilitate direct linkage of employee and manager data.

Recruiting volunteers for the interviews proved to be difficult due to the "arm's length" relationship with injured workers required by the WRHA, i.e. the researcher was unable to approach potential participants directly but had to rely on occupational health nurses or on posters to advertise the study and then wait for volunteers to contact the researcher. Despite these difficulties, the qualitative aspect of this study yielded rich data that supported and supplemented the data from the quantitative survey analyses. It is recommended that future qualitative studies include a greater variety of key informants from the workplace system as well as representatives from the external healthcare and insurance systems in order to ensure saturation of the data. An in-depth study involving a greater variety of key informants would add to our understanding of the nature of worker participation as well as the relationships among worker participation, participative workplace characteristics, and the success of RTW programs and costs related to workplace injury.

6.0 Policy and Practice Implications for Employers and Workers

Worker participation, as described by employees, is an important component of the RTW process and an important component of safety in the workplace. Worker participation appears to be facilitated by a range of workplace characteristics as well as some worker characteristics.

6.1 Potential for Workers' Development

Commitment in worker participation is related to workers' characteristics such as occupation, education and history of work injury. Although these characteristics are not generally amenable to change via in-services or educational workshops in the workplace, it is suggested that the concept of workers' commitment in participation could be

addressed in programs that would be jointly sponsored by workers and management. The Occupational Health and Safety Agency for Healthcare in British Columbia (OHSAH, 2003) has developed, and continues to conduct research in, joint union – management injury prevention and RTW programming. The Prevention and Early Active Return-to-work Safely (PEARS)[1] Program is an example of healthcare workplaces – unions and management – working collaboratively to design and implement prevention and intervention programs that are being demonstrated to be effective (OHSAH, 2003).

It is also suggested that workers who sustain a workplace injury that results in extensive time lost from their jobs should be coached early in their recovery about their rights as well as their responsibilities in the RTW process. This is likely to be most effective when carried out through the occupational health professional from within the workplace since it is s/he that is able to make the link between the worker who is outside the system due to the injury, and the worker's job within the workplace. Albrecht et al. (2001) stressed the importance of workers' need for information on rights and benefits available to them as well as the importance of having a workplace supportive of modifying work activities. The workers surveyed in Albrecht's study (2001) also indicated that workers currently did not have input into vocational rehabilitation plans

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[1] **P**reventing injuries through hazard assessment and workplace modifications,
Early intervention including encouraging early reporting of signs and symptoms,
Active involvement of the worker and other members of the RTW team and
Return to work of the injured worker,
Safely.
PEARS is an integrated musculoskeletal injury (MSI) prevention, early intervention, and return to work process. Its overall purpose is to reduce the incidence, duration, time loss, and related costs of workplace MSIs through early intervention and the implementation of preventative strategies such as ergonomic assessments and workplace accommodation.
PEARS focuses on integrating primary and secondary prevention of injuries. Specifically, PEARS focuses on preventing injuries before they occur, and preventing disability with early intervention. This requires a high level of support from health care providers, managers, coworkers, unions, and insurers.

that were initiated by the Worker Safety and Insurance Board of Ontario (WSIB). Although the Ontario study focused on workers' relationships with the WSIB, they nevertheless emphasized the need for workers to have access to information and services and for workers to have increased input and control over decisions in managing their benefits and returning to their jobs.

6.2 Implications for Development of the Workplace

Worker participation in the workplace is most likely to be found in workplaces that also have a positive safety culture and a positive people-oriented work environment. This suggests that attention to safety, RTW, and facilitating a people-oriented work climate are key elements for any employer who wants to facilitate worker participation. It is noteworthy that the elements that are important to reducing the costs of workplace injury (i.e. safety and people-positive environment) are also important in facilitating workers' participation. It is suggested that a workplace may facilitate both workers' participation and reduce work injury costs by setting in place structures such as RTW programs and policies, ergonomic interventions, disability management policies and programs, and safety practices. Although a people-oriented environment is an important component of a workplace that fosters worker participation, if the structures are not in place, it may be that the potential for worker participation will be limited.

Respect for the worker by the employer appears to be another foundational component of worker participation. This is a quality that is much more difficult to facilitate and implement in the workplace and requires more than developing a policy or a program. For employers who have not been trained to involve workers and to trust them with making appropriate decisions, this may involve a great deal of risk (Foster-Fishman

& Keys, 1997; Pransky et al., 2001). Workers may also have to overcome what may be a deeply ingrained distrust of the employer to learn to take the risk of working together for their mutual benefit (Betcherman et al., 1994). To complicate the task even more, there are likely to be a wide range of individuals in the workplace that the worker may need to work with and to trust. Supervisors and managers in the workplace will also need to learn to relate to each worker individually and avoid the pitfall of allowing their opinion of one worker to influence their opinion of all workers (Pransky et al., 2001). In its RTW and disability management certification training programs, NIDMAR actively teaches and promotes respect for the workers and supports full collaboration between unionized workers and managers in injury prevention and RTW policies and programs.

7.0 Conclusions and Future Directions for Research

7.1 Conclusions

This study has contributed to our understanding of worker participation within a multi-systems model of worker participation in the workplace and RTW. Logically, workers' first involvement with external healthcare and insurance systems as well as the "internal sub-system" involved in RTW programming is precipitated by the event of an injury. It has been noted that prior to the injury, the worker may have had little or no involvement with these systems. As a result of the injury, the worker is generally forced to deal with all three systems from a position that is essentially "external" to the workplace. Thus, the worker is left without the support of the workplace system, being outside of the usual communication networks that exist within the workplace. Frequently, the most active link to that support and network occurs either through the occupational health department or some combination of the worker's union representative and the

occupational health professional. If there is no structured program or designated liaison person to assist the worker following an injury, it is more likely that RTW will not be successful.

This study has shown that worker participation is intricately linked to the structures and culture of a workplace and is not solely intrinsic to the worker. Workplaces may facilitate worker participation through the development of policies and programs that promote workers' participation, especially in areas concerning safety and RTW. The findings revealed that personal characteristics of workers have less impact on whether or not workers participate in their workplace than do workplace characteristics that reflect a positive safety climate with structures in place that facilitate worker involvement in safety and RTW practices.

Furthermore, the presence of a people-positive workplace environment contributes to worker participation in the workplace as well as participation in RTW. A people oriented culture and a relationship dynamic that involves respect and trust between the worker and the employer are also important to understanding the duration of time-loss injuries and costs related to workplace injuries.

Finally, workplaces have the potential to facilitate both worker participation and effective RTW strategies to reduce costs related to work injury.

7.2 Future Directions for Research

This study has brought to light potential avenues for further research. First, as already mentioned, further research is needed using confidential linkages to examine the relationship between worker participation (both structure and commitment) and costs of workplace injury.

Secondly, given the contribution this study has made to our understanding of worker participation, it is suggested that the next step would be to develop a scale or questionnaire for measuring worker participation in RTW and in the workplace.

Thirdly, intervention studies that examine the effectiveness of strategies to increase worker participation would enrich our understanding of best practices in this field.

Finally, since this study has shown the importance of a people-positive workplace environment, it is recommended that further qualitative studies be implemented to examine the nature of trust and respect in the workplace, how they are facilitated by workplace structures and fostered through relationship dynamics between workers and managers.

REFERENCES

Abramson, J.H. (1997). *Survey methods in community medicine, 4th ed.* Edinburgh, UK: Churchill Livingstone, Inc.

Aday, L. A. (1996). *Designing and conducting health surveys, 2nd ed.* San Francisco, CA: Jossey-Bass, Inc.

Aday, L. & Kasper, J. (1989). Strategies for evaluating questions. In F. Fowler (Ed.), *Health Survey Research Methods* (Conference proceedings). US Department of Health and Human Services: National Center for Health Services Research and Health Care Technology Assessment.

Agar, M.H.(1986). *Speaking of ethnography*. Beverly Hills, CA: Sage.

Albrecht, P. et al. (2001). *Making the system better: The injured workers participatory research project.* Ontario: Ontario Workplace Safety and Insurance Board.

Alexander, K. O. (1975). On work and authority: Issues in job enlargement, job enrichment, worker participation and shared authority. *American J. of Economics and Sociology, 34* (1), 43-54.

Amick, B., Habeck, R., Hunt, A., Fossel, A., Chapin, A., Keller, R. & Katz, J. (2000-a). Measuring the impacts of organizational behaviors on work disability prevention and management. *J. of Occupational Rehabilitation, 10* (1), 21-37.

Amick, B., Lerner, D., Rogers, W., Rooney, T., & Katz, J. (2000-b). A review of health related work outcome measures and their uses and recommended measures. *Spine, 25* (24), 3125-3160.

Appelbaum, E. & Batt, R. (1994). *The new American workplace: Transforming work systems in the United States.* Ithaca, NY: Cornell ILR Press.

Ash, P. & Goldstein, S. (1991). Predictors of returning to work. *Bulletin Am. Academy Psychiatry Law. 23,* 205-210.

Association of Workers' Compensation Boards of Canada [AWCBC]. (1999). *Work injuries and disease, 4th ed.*, 1996-1998 (NWISP), AWCBC.

Association of Workers' Compensation Boards of Canada. (2002). Retrieved from http://www.awcbc.org/english/NWISP_Stats.htm

Babbie, E. (1986). *The practice of social research, 4th ed.,* Belmont, CA: Wadsworth Publishing Co.

Backer, T. (1986). Disability management: Implications for clinical practice and consultation in the workplace. *Journal of Applied Rehabilitation Counseling. 17* (3), 38-42.

Baldwin, J., Johnson, W. & Butler, R. (1996). The error of using returns-to-work to measure the outcomes of health care. *American Journal of Industrial Medicine. 29*, 632-41.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.

Bandura, A. (1992). Exercise of personal agency through the self-efficacy mechanism. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action.* Washington, DC: Taylor & Francis Hemisphere Publishing Co.

Baril, R. & Berthelette, D. (2000). Components and organizational determinants of workplace interventions designed to facilitate early return to work. Report of IRSST-Communications Division, Montreal: Institut de recherché Robert-Sauve en sante et en securite du travail.

Baril, R., Clarke, J., Friesen, M., Stock, S., Cole, D. & Work-Ready group. (2003). Management of return-to-work programs for workers with musculoskeletal disorders: A qualitative study in three Canadian provinces. *Social Science and Medicine, 57*, 2101-2114.

Batt, R. & Appelbaum, E. (1995). Worker participation in diverse settings: Does the form affect the outcome, and if so, who benefits? *British Journal of Industrial Relations, 33* (3), 0007-1-80.

Beaton, D.E., Cole, D.C., Manno, M., Bombardier, C., Hogg-Johnson, S., & Shannon, H.S. (2000). Describing the burden of upper-extremity musculoskeletal disorders in newspaper workers: What difference do case definitions make? *Journal of Occupational Rehabilitation, 10* (1), 39-53.

Bendix, A., Labriola, M. and Boekgaard, P. (1998). Functional restoration for chronic low back pain. *Spine, 23* (6), 717-725.

Bernstein, P. (1976). Necessary elements for effective worker participation in decision-making. *Journal of Economic Issues. 10* (2), 490-522.

Betcherman, G., McMullen, K., Leckie, N. & Caron, C. (1994). *The Canadian workplace in transition.* Kingston: IRC Press.

Bigos, S., Spengler, D., Martin, N., Zeh, J., Fisher, L. & Nachemson, A. (1986). Back injuries in industry: A retrospective study. III. Employee-related factors. *Spine, 11*, 252-6.

Bluestone, B. & Bluestone, I. (1992). Workers (and managers) of the world unite. *Tech Review, 95* (8), 31-40.

Bohr, P.C. & Barrett, N.E. (1997). Assessing the efficacy of educational programs for musculoskeletal work injury prevention. *Journal of Occupational Rehabilitation, 7* (4), 239-247.

Bonaiuti, D. & Fontanella, G. (1996). The affective dimension of low-back pain: Its influence on the outcome of back school. *Archives of Physical Medicine and Rehabilitation, 77*, 1239-1242.

Bongers, P.M., deWinter, C.R., Kompier, M.A.J., & Hildebrandt, V.H. (1993). Psychosocial factors at work and musculoskeletal disease. *Scand J Work Environ Health, 19* (5), 297-312.

Borgen, W. & Amundson, N. (1984). *The experience of unemployment*. Scarborough, ON: Nelson Canada.

Borgen, W., Amundson, N., & Biela, P. (1987). The experience of unemployment of the physically disabled. In H. Day & R. Brown (Eds.), *Natcon, 14*. Ottawa: Employment & Immigration Canada.

Boyle, J.S. (1994). Styles of ethnography, In J.M.Morse (Ed.), *Critical issues in qualitative research methods*, pp. 159-185, Thousand Oaks, CA: Sage.

Branch, N. (1998). Maintaining work capacity in the aged worker via progressive resistance training: The implications for occupational therapy practitioners. *Work, 10*, 21-29.

Brooker, A-S., Clarke, J., Sinclair, S., Pennick, V., & Hogg-Johnson, S. (2000). Effective disability management and return-to-work practices. In T. Sullivan (Ed.), *Injury and the new world of work*. Vancouver: UBC Press.

Brooker, A-S., Cole, D., Hogg-Johnson, S., Smith, J., & Frank, J. (2001). Modified work: Prevalence and characteristics in a sample of workers with soft-tissue injuries. *The J. of Occupational and Environmental Medicine, 43*(3), 276-284.

Campolieti, M. & J.N. Lavis. The silent payer speaks: Workers compensation expenditures in Canada, 1970-1994. Working paper 87, Institute for Work and Health, Toronto, (1998).

Canada Labour Code (2000). Retrieved from www.hrdc-drhc.gc.ca/~oshweb April 2001.

Canforth, C. & Paton, R. (1991). Worker cooperatives and the democratization of work in Western Europe. In J. Wisman (Ed.) *Worker empowerment: The struggle for workplace democracy.* New York: Bootstrap Press.

Checkoway, H., Pearce, N. and Crawford-Brown, D. (1989). *Research methods in occupational epidemiology.* New York: Oxford University Press.

Chung, J., Cole, D. & Clarke, J. (2000). Women, work and injury. In T. Sullivan, *Injury and the new world of work.* Vancouver: UBC Press.

Clarke, J., Cole, D., & Ferrier, S. (2000). Return to work after a soft tissue injury: A qualitative exploration. Working paper #127, Toronto, ON: Institute for Work and Health.

Clarke, R.D. (1982). Worker participation in health and safety in Canada. *International Labour Review, 121* (2), 199-205.

Cole, D., Beaton, D. & Shannon, H. (1995). The process of recovery from work-related soft tissue injuries: A discussion paper. Working paper #32, Toronto: Institute for Work and Health.

Constable, J. F. (1984). The effects of social support and the work environment upon burnout among nurses (Doctoral dissertation, University of Iowa, Ames, 1883). *Dissertation abstracts international, 44,* 3713B.

Cooper, J.E., Tate, R. B., Yassi, A., & Khokar, J. Effect of an early intervention program on the relationship between subjective pain and disability measures in nurses with low back injury. *Spine, 21* (1996), 2329-2336.

Cooper, J., Tate, R., & Yassi, A. (1997-a). Components of initial and residual disability following back injury in nurses. *Occupational Health for Health Care Workers* (3rd International Congress). Edinburgh, UK, 129-133.

Cooper, J., Tate, R. & Yassi, A. (1997-b). Work hardening in an early return to work program for nurses with back injury. *Work, 8*, 149-156.

Cormier, D. (1997). The connection between labor productivity and worker participation. (Doctoral dissertation, University of Notre Dame).

Creswell, J.W. (1994). *Research design qualitative and quantitative approaches.* Thousand Oaks, CA: SAGE Publications.

Creswell, J.W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE Publications.

Crook, J., Milner, R., Schultz, I., & Stringer, B. (2002). Determinants of occupational disability following a low back injury: A critical review of the literature. *Journal of Occupational Rehab, 12* (4), 277-295.

Daynard, D., Yassi, A., Cooper, J. E., Tate, R., Norman, R., & Wells, R. (2001). Biomechanical analysis of peak and cumulative spinal loads during simulated patient-handling activities: A sub-study of a randomized controlled trial to prevent lift and transfer injury of health care workers. *Applied Ergonomics, 32* (3), 199-214.

Deutsch, S. & Schurman, S. (1993). Labor initiatives for worker participation and quality of working life. *Economic and Industrial Democracy, 14,* 345-354.

Dillman, D. (1978). *Mail and telephone surveys*. New York: John Wiley & Sons.

Durand, M. J. & Loisel, P. (2001). Therapeutic return to work: Rehabilitation in the workplace. *Work, 17* (1), 57-64.

Dyck, D. (1996). Managed rehabilitative care. *AAOHN, 44*, (1), 18-27.

Eakin, J. (1992). Leaving it up to the workers: Sociological perspective on the management of health and safety in small workplaces. *International Journal of Health Services, 22*, 4, 689-704.

Ekeberg, C., Lagerstrom, M., & Lutzen, K. (1997). Empowerment and occupational health nursing. *AAOHN Journal, 45*, 341-348.

Ekberg, K. (1998). Workplace changes in successful rehabilitation. *Journal of Occupational Rehabilitation, 5*, 9253-269.

Estrin, S., Jones, D., & Svejnar, J. (1987). The productivity effects of worker participation: Producer cooperatives in western economies. *Journal of Comparative Economics, 11*, 40-61.

Fawcett, S.B., White, G.W., Balcazar, F.E., Suarez-Balcazar, Y., Mathews, R.M., Paine-Andrews, A., Seekins, T., & Smith, J.F. (1994). A contextual-behavioral model of empowerment: Case studies involving people with physical disabilities. *American Journal of Community Psychology, 22*, 471-496.

Feuerstein, M., Marshall, L., Shaw, W.S., & Burrell, L.M. (2000). Multicomponent intervention for work-related upper extremity disorders. *Journal of Occupational Rehabilitation, 10* (1), 71-83.

Feuerstein, M. & Thebarge, R. W. (1991). Perceptions of disability and occupational stress as discriminators of work disability in patients with chronic pain. *Journal of Occupational Rehabilitation, 1,* 185-195.

Feyer, A., Williamson, A., Mandryk, J., DeSilva, I. And Healy, S. (1992). Role of psychosocial risk factors in work-related low-back pain. *Scandinavian Journal of Work, Environment and Health, 18*, 368-75.

Fisher, D. L. & Fraser, B. J. (1991). Validity and use of school environment instruments. *Journal of Classroom Interaction, 26*, 13-18.

Finlay, W. (2002). Sociology of work and industry, SOCI 3750. Retrieved from http://www.arches.uga.edu/-wfinlay Athens, GA: University of Georgia.

Fiske, M. (1994). Prevention of work disability using a health information model. *AAOHN Journal, 42* (9), 435-439.

Florin, P., & Wandersman, A. (1990). An introduction to citizen participation, voluntary organizations, and community development: Insights for empowerment through research. *American Journal of Community Psychology, 18*, 41-54.

Foster-Fishman, P.G. & Keys, C.B. (1997). The Person/Environment dynamics of employee empowerment: An organizational culture analysis. American *Journal of Community Psychology, 25* (3), 345-369.

Fowler, F. (1989). Key methodological problems: An agenda for research. In F. Fowler (Ed.), *Health survey research methods*. USA: National Center for Health Services Research and Health Care Technology Assessment.

Franche, R-L. & Krause, N. (2002). Readiness for return to work following injury or illness: Conceptualizing the interpersonal impact of health care, workplace and insurance factors. *Journal of Occupational Rehab, 12* (4), 233-256.

Frank, J.W., Brooker, A. S., DeMaio, S. E., Kerr, M. S., Maetzel, A., Shannon, H., Sullivan, T., Norman, R. W. & Wells, R. P. (1996). Disability resulting from occupational low back pain, Part II: What do we know about secondary prevention? A review of the scientific evidence on prevention after disability begins. *Spine, 21*, 2918-29.

Frank, J.W., Pulcins, I.R., Kerr, M.S., Shannon, H.S. & Stansfeld, S.A. (1995). Occupational back pain–an unhelpful polemic. *Scand J. Work Environ Health, 21*, 601-612.

Frank, J.W, S. Sinclair, S. Hogg-Johnson, H. Shannon, C. Bombardier, D. Beaton, & D. Cole. (1998). Preventing disability from work-related low-back pain: New evidence gives new hope - if we can just get all the players onside. *Canadian Medical Association Journal, 158*, 1625-31.

Frank, J.W. & Work-Ready Research Team. (1999). Facilitation of return-to-work after a soft tissue injury: Synthesizing the evidence and experience: A HEALNet report on the finding of the Work-Ready project, Winnipeg: HEALNet.

Frankcom, K. (1992). Injured and silenced: Working with workers' compensation claimants and their families. *Australia New Zealand Journal of Family Therapy, 13*, 219-223.

Freedman, R. & Fesko, S. (1996). The meaning of work in the lives of people with significant disabilities: Consumer and family perspectives. *Journal of Rehabilitation, July/August/September*, 49-55.

Friesen, M. (1989). The unemployment experience of head-injured adults. Unpublished master's thesis, University of Manitoba, Winnipeg, MB.

Friesen, M., Yassi, A., & Cooper, J. (1999). Manitoba Work-Ready: Stakeholder perspectives on return-to-work. Unpublished report for HEALNet. Winnipeg, MB: University of Manitoba.

Friesen, M., Yassi, A., & Cooper, J. (2001). Return-to-work: The importance of human interactions and organizational structures. *Work, 17* (1), 11-22.

Frymoyer, J. M. (1991). Predicting disability from low back pain. *Clinical Orthopedic Relat Research, 279,* 101-109.

Gage, M. & Polatajko, H. (1995). Naming practice: The case for the term client-driven. *Canadian Journal of Occupational Therapy, 62* (3), 115-118.

Gardner, J. (1991). Early referrals and other factors affecting vocational rehabilitation outcomes for the workers' compensation client. *Rehabilitation Counseling Bulletin. 34,* 197-209.

Gevers, J. (1983). Worker participation in health and safety in the EEC: The role of representative institutions. *International Labour Review, 122* (4), 411-428

Gliner, J. A. (1994). Reviewing qualitative research: Proposed criteria for fairness and rigor. *The Occupational Therapy Journal of Research, 14* (2), 78-90.

Gove, P.B. (Editor in Chief). (1981). *Webster's third new international dictionary.* Springfield, MA: G & C Merriam Company.

Government of Manitoba, Hansard, vol. 19. Debate regarding the Pine Falls paper mill. Retrieved January 2003 from www.gov.mb.ca/leg-asmb/hansard/6th-35th/vol9/h0093.html

Greenberg, E. S. (1975). The consequences of worker participation: A clarification of the theoretical literature. *Social Science Quarterly, 56* (2), 201-209.

Gunn, C.E. (1984). *Workers' self-management in the United States*. Ithaca, NY: Cornell University Press.

Gunderson, M. & Hyatt, D. (2000). Workforce and workplace change: Implications for injuries and compensation. In T. Sullivan (Ed.), *Injury and the new world of work,* Vancouver: UBC Press, pp.46-68.

Habeck, R. & Hunt, H. A. (1999). Disability management perspectives. *American Rehabilitation, Spring/Summer*, 18-25.

Habeck, R., Leahy, M., Hunt, H., Chan, F. & Welch, E. (1991). Employer factors related to workers' compensation claims and disability management. *Rehabilitation Counseling Bulletin, 34* (3), 210-226.

Habeck, R., Scully, S., VanTol, B. & Hunt, H.A. (1998). Successful employer strategies for preventing and managing disabilities. *Rehabilitation Counseling Bulletin, 42* (2), 144-161.

Haines, V., Hurlbert J., & Zimmer, C. (1991). Occupational stress, social support, and the buffer hypothesis. *Work and Occupations, 18* (2), 212-235.

Haldorsen, E., Jensen, I., Linton, S., Nygren, A. & Ursin, H. (1997). Training work supervisors for reintegration of employees treated for musculoskeletal pain. *Journal of Occupational Rehabilitation, 7* (1), 33-43.

Harshbarger, D. & Rose, T. (1991). New possibilities in safety performance and the control of workers' compensation costs. *Journal of Occupational Rehabilitation, 1* (2), 133-143.

Hasenfeld, Y. (1991). *Human service organizations*. Englewood Cliffs, NJ: Prentice Hall.

Hassard, T. (1991). *Understanding biostatistics*. St. Louis, MO: Mosby–Year Book, Inc.

Hasselkus, B. R. (1991). Qualitative research: Not another orthodoxy. *The Occupational Therapy Journal of Research, 11* (1), 3-7.

Hasselkus, B.R. (1995). Beyond ethnography: Expanding our understanding and criteria for qualitative research. *The Occupational Therapy Journal of Research, 15* (2), 75-84.

Hazard, R., Bendix, A. & Fenwick, J. (1991). Disability exaggeration as a predictor of functional restoration outcomes for patients with chronic low-back pain. *Spine, 16* (9), 1062-1067.

Health Canada. (2002). The business case for active living at work. Retrieved Jan. 2003 from http://www.hc.sc.gc.ca/hppb/fitness/work/main_b_e.html

Health Canada. (1999). *Toward a healthy future: Second report on the health of Canadians.* Retrieved Sept. 2004 from http://www.hc-sc.gc.ca/hppb/phdd/report/subin.html

Heerwagen, J., Heubach, J., Montgomery, J., & Weimer, W. (1995). Environmental design, work, and well being. *AAOHN Journal, 43* (9), 458-467.

Helm, R.E., Powell, N.J. & Nieuwenhuijsen E.R. (1999). A return to work program for injured workers: A reassignment model. *Work, 12*, 123-131.

Helmer, D.C., Dunn, L.M., Eaton, K., Macedonio, C., & Lubritz, L. (1995). Implementing corporate wellness programs. *AAOHN Journal, 43* (11), 558-563.

Himmelstein, J., Feuerstein, M, Stanek, E., Koyamatsu, K., Pransky, G., Morgan, W. & Anderson, K. (1995). Work-related upper-extremity disorders and work disability: Clinical and psychosocial presentation. *Journal of Occupational and Environmental Medicine, 37* (11), 1278-1286.

Houtman, I., Bongers, P., Smulders, P., & Kompier, M. (1994). Psychosocial stressors at work and musculoskeletal problems. *Scandinavian Journal of Work Environment and Health, 20* (2), 139-145.

Hudak, P., Cole, D. and Frank, J. (1998). Perspectives on prognosis of soft tissue musculoskeletal disorders. *International Journal of Rehabilitation Research, 21,* 29-40.

Hunsley, T.M. (1997). Disability programs: Considerations on cost and coordination. Occasional paper 5. Toronto: Institute for Work and Health.

Hunt, H. A.,. Habeck, R. V., Vantol, B. & Scully, S. M. (1993*). Disability prevention among Michigan employers 1988-1993.* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Isernhagen, S. (Ed.). (1995). *The comprehensive guide to work injury management.* Gaithersburg, MD: Aspen Publishers.

Isernhagen, D. (2000). A model system: Integrated work injury prevention and disability management. *Work, 15*, 87-94.

Jain, H.C. (1990). Worker participation in Canada: Current developments and challenges. *Economic and Industrial Democracy, 11*, 279-290.

Jelinek, M., Smircich, L., & Hirsch, P. (1983). Introduction: A code of many colors. *Administrative Science Quarterly, 28*, 331-338.

Jenkins, R., Harvey, S., Butler, T. & Thomas, R.L. (1996). Minor psychiatric morbidity, its prevalence and outcome in a cohort of civil servants - a seven-year follow-up study. *Occupational Medicine, 46* (3), 209-215.

Jerusalem, M., & Schwarzer, R. (1992). Self-efficacy as a resource factor in stress appraisal processes. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (195-213). Washington, DC: Hemisphere.

Johnson, L., Archer-Heese, G., Caron-Powles, D. & Dowson, T. (2001). Work hardening: Outdated fad or effective intervention? *Work, 16* (3), 235-244.

Johnson, J. & Hall, E. (1988). Job strain, workplace social support and cardiovascular disease: a cross-sectional study of a random sample of Swedish workers. *American Journal of Public Health, 78,* 1336-1342.

Jundt, J. & King, P. M. (1999). Work rehabilitation programs: A 1997 survey, *Work, 12*, 139-144.

Juravich, T. (1985). *Chaos on the shop floor: A worker's view of quality, productivity, and management*. Philadelphia: Temple Press.

Karas, B. and Conrad, K. (1996). Back injury prevention interventions in the workplace. *AAOHN Journal, 44* (4), 189-196.

Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health, 71* (7), 694–705.

Karasek, R. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. Washington, USA: Basic Books.

Kaufert, J. (1996). Class discussion in course Research Methods 93.735. Winnipeg: University of Manitoba.

Keller, B. K. (1995). Rapporteur's report: Emerging models of worker participation and representation. *British Journal of Industrial Relations, 33* (3), 317-327.

Kelsey, J.L., Thompson, W.D., & Evans, A.S. (1986). *Methods in observational epidemiology.* New York: Oxford University Press.

Kemp, B. & Kleinplatz, F. (1985). Vocational rehabilitation of the older worker. *American Journal of Occupational Therapy, 39* (5), 322-6.

Kennedy, P. & Grey, N. (1997). High pressure areas. *Nursing Times, 93*, 26-28.

Kenny, D. (1994). Determinants of time lost from workplace injuries: The impact of the injury, the injured, the industry, the intervention and the insurer. *International Journal of Rehabilitation Research, 17* (4), 333-42.

Kenny, D. (1995). Common themes, different perspectives: A systemic analysis of employer-employee experiences in occupational rehabilitation. *Rehabilitation Counseling Bulletin, 39* (1), 54-77.

Kirsh, B., (2000). Organizational culture, climate and person-environment fit: Relationships with employment outcomes for mental health consumers, *Work, 14*, 109-122.

King, P. (1993). Outcome analysis of work hardening programs. *American Journal of Occupational Therapy, 47* (7), 595-603.

King, P. (1994). Participatory ergonomics. *Work, 4* (3), 195-2000.

King, P. (1998). *Sourcebook of occupational rehabilitation.* New York: Plenum Press.

Kim, J. & Mueller, C. W. (1978). Introduction to factor analysis: What it is and how to do it. In J. Sullivan & R. Niemi (Eds.), *Series: Quantitative applications in the social sciences*, Beverly Hills: SAGE Publications.

Koehoorn, M. (1999). Work organization factors and musculoskeletal symptoms and claims among health care workers. Unpublished doctoral dissertation, UBC, Vancouver, BC.

Krause, N., Dasinger, L. and Neuhauser, F. (1998). Modified work and return to work: A review of the literature. *Journal of Occupational Rehabilitation. 8* (2), 113-139.

Krause, N., Frank, J., Dasinger, L., Sullivan, T., & Sinclair, S. (2001). Determinants of duration of disability and return-to-work after work-related injury and illness: Challenges for future research. *American Journal of Industrial Medicine, 40* (4), 464-484.

Krefting, L. (1989). Disability ethnography: A methodological approach for occupational therapy research. *Canadian Journal of Occupational Therapy, 56* (2) 61-66.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy, 45* (3), 214-222.

Krefting, L. & Krefting, D. (1991). Cultural influences on performance. In C. Christiansen & C. Baum (Eds.), *Occupational Therapy*, pp. 99-122. Thorofare, NJ: Slack Inc.

Labaw, P. (1981). *Advanced questionnaire design.* Cambridge, MA: Abt Books.

Lancourt, J. and Kettelhut, M. (1992). Predicting return to work for lower back pain patients receiving worker's compensation. *Spine, 17* (6), 629-40.

Lanes, T., Gauron, E., Spratt, K., Wernimont, T., Found, E. and Weinstein, J. (1995). Long-term follow-up of patients with chronic back-pain treated in a multi-disciplinary rehabilitation program. *Spine, 20* (7), 801-6.

Lavis, J. (1998). Employers, health care, and health: Building on what works. Occasional Paper # 6, Toronto, ON: Institute for Work and Health.

Law, M., Baptiste, S. & Mills, J. (1995). Client-centred practice: What does it mean and does it make a difference? *Canadian Journal of Occupational Therapy, 62* (5), 250-257.

Lehmer M. & Bentley, A. (1997). Treating work stress: An alternative to workers' compensation. *J. of Occupational and Environmental Medicine, 39*(1), 63-67.

Leino, P. & Hanninnen, V. (1995). Psychosocial factors at work in relation to back and limb disorders. *Scandinavian Journal of Work, Environment and Health, 21*, 134-142.

Leslie, D., Holzhalb, C. & Holland, T. (1998). Measuring staff empowerment: Development of a worker empowerment scale. *Research on Social Work Practice, 8* (2), 212-222.

Levine, D.I. & Tyson, L.D. (1990). Participation, productivity and the firm's environment. In A.S.Blinder (Ed.), *Paying for productivity,* Washington, DC: Brookings Institute.

Lewchuk, W., L. Robb and V. Walters. (1996). The effectiveness of Bill 70 and joint health and safety committees in reducing injuries in the workplace: The case of Ontario. *Canadian Public Policy, 22*, 225-243.

Lewchuk, W. & Robertson, D. (1997). Production without empowerment: Work reorganization from the perspective of motor vehicle workers. *Capital & Class, 63* (Autumn), 37-64.

Loisel, P., Abenheim, L., Durand, P., Esdaile, J. Suissa, S., Gosselin, L., Simard, R., Turcotte, J. & Lemaire, J. (1997). A population-based, randomized clinical trial on back pain management. *Spine, 22*, (24), 2911-2918.

Locker, D. & Kaufert, J. (1988). The breath of life: Medial technology and the careers of people with post-respiratory poliomyelitis. *Sociology of Health and Illness, 10* (1), 23-40.

Long, C., Williams, M. & Hollin, C. (1995). Staff perceptions of organization change of treatment delivery on an addiction unit. *Journal of Advanced Nursing, 21*, 759-765.

Lysack, C. & Krefting, L. (1994). Qualitative methods in field research: an Indonesian experience in community based practice. *The Occupational Therapy Journal of Research, 14* (2), 19-110.

MacKenzie, E.J., Shapiro, S., Smith, R.T., Siegel, J.H., Moody, M., & Pitt, A. (1987). Factors influencing return to work following hospitalization for traumatic injury. *American Journal of Public Health, 77* (3), 329-334.

Manitoba Labour Workplace Safety and Health Division. (2001). Work injury statistics for healthcare institutions in Manitoba. Unpublished report. Winnipeg, MB.

Manitoba Labour Workplace Safety and Health Division & Workers' Compensation Board of Manitoba (1998). *Working with you for a safe and healthy workplace.* Winnipeg: Manitoba Labour & Manitoba WCB.

Manitoba Labour Education Centre, Manitoba Federation of Labour & Manitoba League of the Physically Handicapped. (1995). *Duty to Accommodate: Workers with Disabilities Project.* Winnipeg: Manitoba Labour Education Centre.

Manitoba Workplace Safety and Health Act. (1987). Government of Manitoba, Retrieved April 2001 from www.gov.mb.ca/labour/safety/publicat/index.html#legislation

Manitoba Workplace Safety and Health Act. (2002). Government of Manitoba, Retrieved April 2004 from www.gov.mb.ca/labour/safety/publicat/index.html#legislation

Manitoba Labour Workplace Safety and Health Division & Manitoba Workers' Compensation Board. Audit team B. Warrack, M.Geiger, & G. Blahey. (1996). *Interim report on safety audits in 8 manufacturing firms*. Winnipeg, MB.

Marx, K. (1845-46) as cited in J. Elliott, (1981). *Marx and Engels on economics, politics, and society.* Santa Monica, CA: Goodyear Publishing Company.

Marx, K. (18 44) as cited in R. Tucker (Ed.), (1978). *The Marx-Engels Reader, 2nd ed.* New York: W. W. Norton & Company.

Marx, K. (1977) *Capital*, vols 1-3. In B. Fowkes and D. Fernbach, (Trans). New York: Vintage Books. (Original work published 1845).

Maxwell, J.A. (1996). *Qualitative research design: An interactive approach.* Thousand Oaks, CA: SAGE Publications.

McIntosh, G., Frank, J., Hogg-Johnson, S., Bombardier, C., & Hall, H. (2000). Prognostic factors for time receiving workers' compensation benefits in a cohort of patients with low back pain. *Spine, 25* (2), 147-157.

Melnik, M. (1990). Enlisting participation in an injury prevention and management program. *Work, 1,*39-48.

Menard, M. & Hoens, A. (1994). Objective evaluation of functional capacity: Medical, occupational and legal settings. *Journal of Orthopedic and Spinal Physical Therapy, 19* (5), 249-260).

Merrill, A. (1997). Worker's compensation, litigation, and employment factors in return to work, *Work, 9*, 245-253.

Metz, B. (1992). The Clearinghouse: A model for improving organizational work climate. Doctoral dissertation, Temple University, Philadelphia.

Merrill, A. (1997). Worker's compensation, litigation, and employment factors in return to work. *Work. 9,* 245-253.

Mitchell, L., M. Brodwin & R. Benoit, (1990). Strengthening the workers' compensation system by increasing client efficacy. *Journal of Applied Rehabilitation Counseling, 21*, 22-26.

Moos, R. H. (1986). *Work Environment Scale Manual, 2nd ed.* Palo Alto, CA: Consulting Psychologists Press.

Moos, R. H. (1994).). *Work Environment Scale Manual, 3rd ed.* Palo Alto, CA: Consulting Psychologists Press.

Moos, R. H. & Insel, P. N. (1994). *Work Environment Scale, Form R.* Palo Alto, CA: Consulting Psychologists Press.

Moos, R. & Schaefer, J. (1997). Health care work environments. In A. Baum, S. Newman, J. Weinman, R. West & C. McManus (Eds.), *Cambridge Handbook of Psychology, Health, and Medicine*, pp 288-291 Cambridge, UK: Cambridge University Press.

Moore, J. and Garg, A. (1996). Use of participatory ergonomics teams to address musculoskeletal hazards in the red meat packing industry. *American Journal of Industrial Medicine, 29*, 402-408.

Morris, W. (1973). Useful work versus useless toil. In A .L. Morton, (Ed). *Political writings of William Morris*, London, England: Lawrence & Wishart.

Morse, J. and P. Field (1995). *Qualitative research methods for health professionals, 2nd ed.* Thousand Oaks, CA: Sage Publications Inc.

Niemeyer, L.O., Jacobs, K., Reynolds-Lynch, K., Bettencourt, C., & Lang, S. (1994). Work hardening: Past, present, and future – The Work Programs Special Interest Section national work-hardening outcome study. The *American Journal of Occupational Therapy, 48* (4), 327-339.

Norman, G. & Streiner, D. (1999-a). *PDQ Statistics, 2nd ed.* Hamilton: B. C. Decker, Inc.

Norman, G. & Streiner, D. (1999-b). *Biostatistics: The bare essentials*. Toronto: Mosby.

Norman, R.W. & Wells, R. (2000). Ergonomic interventions for reducing musculoskeletal disorders. In T. Sullivan (Ed.), *Injury and the new world of work.*, Vancouver: UBC Press, 115-139.

Norman, R.W., Wells, R., Neumann, P., Frank, J., Shannon, H., Kerr, M. (1998). A comparison of peak vs. cumulative physical work exposure risk factors for the reporting of low back pain in the automotive industry. *Clinical Biomechanics, 13*, 561-573.

Occupational Health and Safety Agency for Healthcare in British Columbia (2003). PEARS principles and objectives. Retrieved April 2004 from www.ohsah.bc.ca

O'Grady, J. (2000). Joint health and safety committees: Finding a balance. In T. Sullivan (Ed.), *Injury and the New World of Work.* Vancouver: UBC Press, pp.162-197.

Olsen, G. (Ed.). (1988). *Industrial change and labour adjustment in Sweden and Canada.* Toronto: Garamond Press.

Olsen, G. (1992). *The struggle for economic democracy in Sweden.* Aldershot, England: Avebury.

Olson, D.L. (1999). An on-site ergonomic program: A model for industry. *Work, 13*, 229-238.

Oppenheim, A. (1966). *Questionnaire design and attitude measurement.* New York: Basic Books, Inc.

Papciak, A. and Feuerstein, M. (1991). Psychological factors affecting isokinetic trunk strength testing in patients with work-related low back pain. *Journal of Occupational Rehabilitation, 1* (2). 95-104.

Parker, M. & Slaughter, J. (1988*). Choosing sides: Unions and the team concept*. Boston: South End Press.

Parsons, T. (1958). Definitions of health and illness in the light of American values and social structure. In E.G. Jaco (Ed.), *Patients, physicians and illness*, USA: The Free Press.

Pheasant, S. & Stubbs, D. (1992). Back pain in nurses: epidemiology and risk assessment. *Applied Ergonomics, 23,* 226-232.

Portney, L. & Watkins, M. (2000). *Foundations of clinical research: Applications to practice, 2nd ed.* New Jersey: Prentice Hall Health.

Pransky, G., Shaw, W., & McLellan, R. (2001). Employer attitudes, training, and return-to-work outcomes: A pilot study. *Assistive Technology, 13*, 131-138.

Ptasznik, E. K. (2002). Return to work: The back injured nurses' perspective. Unpublished master's thesis, University of Manitoba, Winnipeg, MB.

Punch, M. (1994). Politics and ethics in qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook for qualitative research.* Thousand Oaks, CA: Sage Publications.

Rea, L.M. & Parker, R.A. (1997). *Designing and conducting survey research, 2nd ed.* San Francisco, CA: Jossey-Bass Publishers.

Rest, K., (1996). Worker participation in occupational health programs, *AAOHN Journal, 44,* 221-227.

Riddle, C. W. (1986). Labour-management co-operation in Canada. *Royal Commission on the economic union and the development prospects for Canada, 15,* 3-46.

Rooney, P. (1988). Employee ownership and worker participation: Effects on productivity, job satisfaction, and health and safety incidence rates. Doctoral dissertation, University of Notre Dame.

Rooney, P. (1992). Employee ownership and worker participation: Effects on health and safety. *Economics Letters, 39*, 323-328.

Rooney, P. (1995). Employee ownership and worker participation: Effects on absenteeism and quit rates. In D. C. Jones & J. Svejnar (Eds.). *Advances in the economic analysis of participatory and labor-managed firms, Vol.5.* (1995). Greenwich, CT: JAI Press Inc.

Ronald, L. A., Spiegel, J., Tate, R., Yassi, A., & Mozel, M. R. (2002). Effectiveness and cost-benefit of installing mechanical ceiling lifts to reduce musculoskeletal injuries in an extended care hospital unit. *AAOHN Journal, 50*(3), 120-127.

Sass, R. (1986). Workplace health and safety: Report from Canada. *International Journal of Health Services, 16* (4), 565-582.

Schaefer, J. & Moos, R. (1996). Effects of work stressors and work climate on long-term care staff's job morale and functioning. *Research in Nursing and Health, 19*, 63-73.

Schiller, B. (1991). Workplace democracy: The dual roots of worker participation. In M. Hancock, J. Logue & B. Schiller (Eds.). *Managing Modern Capitalism,* New York: Greenwood Press.

Schultz, I. Z., Crook, J., Fraser, K., & Joy, P. W. (2000). Models of diagnosis and rehabilitation in musculoskeletal pain-related occupational disability. *Journal of Occupational Rehab, 10,* (4), 271-293.

Schwarzer, R. (1992). *Self-efficacy: Thought control of action.* Washington, DC: Taylor & Francis Hemisphere Publishing Co.

Schwarzer, R. (1994). Optimism, vulnerability and self-beliefs as health-related cognitions: A systematic overview. *Psychology and health, 9* (3), 161-180.

Schwarzer, R. (1999). Self-regulatory processes in the adoption and maintenance of health behaviors: The role of optimism, goals, and threats. *Journal of Health Psychology, 4 (*2), 115-127.

Schwarzer, R. (2001). General self-perceived self-efficacy in 14 cultures. Retrieved April 2001 from http://userpage.fu-berlin.de/~health/world14.htm

Schwarzer, R. & Jerusalem, M. (1995). Optimistic self-beliefs as a resource factor in coping with stress. In S. Hobfall & M. deVries (Eds.), *Extreme stress and communities: Impact and intervention* (NATO ASI series), pp. 159-177, Norwell, MA: Kluwer Academic Publishers.

Seago, J. (1996). Work group culture, stress, and hostility: Correlations with organizational outcomes. *JONA, 26* (6), 39-47.

Shannon, H., Walters, V., Lewchuk, W., Richardson, J., Moran, L., Haines, T. and Verma, D. (1996). Workplace organizational correlates of lost-time accident rates in manufacturing. *American Journal of Industrial Medicine, 29*, 258-268.

Shannon, H. (2000). Firm-level organizational practices and work injury. In T. Sullivan (Ed.), *Injury and the new world of work*, Vancouver: UBC Press.

Shannon, H., J. Mayr, and T. Haines, (1997). Overview of the relationship between organizational and workplace factors and injury rates. *Safety Science, 26*, 201-17.

Sharp, V. F. (1979). *Statistics for the social sciences*. Boston: Little Brown & Co.

Shoemaker, R., Robin, S. & Robin, H. (1992). Reaction to disability through organization policy: Early return to work policy. *Journal of Rehabilitation, July/Aug/Sep*, 18-24.

Shrey, D. (1996). Disability management in industry: The new paradigm in injured worker rehabilitation. *Disability and Rehabilitation, 18* (8), 408-414.

Shrey, D. & Hursch, N. (1999). Workplace disability management: International trends and perspectives. *Journal of Occupational Rehabilitation, 9* (1), 45-59.

Sinclair, S., Hogg-Johnson, S., Mondloch, M. & Shields, S. (1995). The effectiveness of an early active intervention program for workers with soft-tissue injuries: The early claimant cohort study. Working paper #46. Toronto: Institute for Work and Health.

Sinclair, S., Sullivan, T., Clarke, J. & Frank, J. (1995). A framework for examining return to work in workers' compensation: A view from one North American jurisdiction. Unpublished study presented at the 2nd International Congress on medical-legal aspects of work injuries, Jerusalem, Israel.

Smirchich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly, 28*, 339-358.

Smith, A. (1776). In R. Campbell, A. Skinner & W. Todd (Eds.) (1975). *An inquiry into the nature and causes of the wealth of the nations*. Chicago: University of Chicago Press.

Smith, R. (1994). Therapists' ability to identify safe maximum lifting in low back pain patients during functional capacity evaluation. *JOSPT, 19* (5), 277-281.

Smith, J., Tarasuk, V., Shannon, H., Ferrier, & ECC Prognosis Modelling Group. Prognosis of musculoskeletal disorders: Effects of legitimacy and job vulnerability. Working Paper #67. Toronto: Institute for Work and Health.

Sorenson, G., Stoddard, A., Ockene, J., Hunt, M. K., & Younstrom, R. (1996). Worker participation in an integrated health promotion/ health protection program: Results from the WellWorks project. *Health Education Quarterly, 23* (2), 191-203.

Spengler, D., Bigos, S., Martin, N., Zeh, J., Fisher, L. & Nachemson, A. (1986). Back injuries in industry: A retrospective study. I. Overview and cost analysis. *Spine, 11*, 241-5.

SPSS Science. *SigmaStat*, Version 2.0. USA: SPSS Inc.

Starker, S. (1989). Working up to a better workplace. *VA Practitioner, 6*, 33-44.

Strauser, D. (1995). Applications of self-efficacy theory in rehabilitation counseling. *Journal of Rehabilitation, Jan/Feb/Mar*, 7-11.

Stock, S., Deguire, S., Baril, R., & Durand, M. J. (1999). Obstacles and factors facilitating return to work of workers with musculoskeletal disorders: Summary of the report on the Quebec qualitative study in the electric and electronic sector of Workready Phase I, Montreal, Occupational and Environmental Health Unit, Montreal Department of Public Health.

Strunin, L. and Boden, L. (2000). Paths of re-entry: Employment experiences of injured workers. *American Journal of Industrial Medicine, 38*, 373-384.

Sudman, S. and Bradburn, N. (1982). *Asking Questions: A practical guide to questionnaire design.* San Francisco, CA: Jossey-Bass Publishers.

Sullivan, T. and Frank, J. (2000). Restating disability or disabling the state: Four challenges. In T. Sullivan (Ed.*), Injury and the new world of work,* Vancouver: UBC Press, pp.3-24.

Tarasuk, V. & Eakin, J. (1993). Social dimensions of the experience of work-related back problems. OWCI Working Paper #6. Toronto: Ontario Workers' Compensation Institute.

Tarasuk, V. & Eakin, J. (1994). Back problems are for life: Perceived vulnerability and its implications for chronic disability. *Journal of Occupational Rehabilitation, 4* (1), 3-12.

Tate, D., (1992). Workers' disability and return to work. *American Journal of Physical Medicine and Rehabilitation, 71*, 92-96.

Tate, D., Habeck R. and. Galvin, D. E. (1986). Disability management: Origins, concepts and principles for practice. *Journal of Applied Rehabilitation Counselling, 17*, 5-12.

Terkel, S. (1972). *Working.* New York: Avon Books.

The Manitoba Human Rights Code. (1987). Province of Manitoba, Queen's Printer: Winnipeg, MB.

The Manitoba Human Rights Commission. (1996). *Accommodating equality guidelines, Reasonable accommodation guidelines under the provisions of The Manitoba Human Rights Code*. Winnipeg, Manitoba.

The Workers' Compensation Board of Manitoba (1993). *Vocational rehabilitation.* Winnipeg, MB: The Workers' Compensation Board of Manitoba.

Tomer, J. F. (1988). Worker participation: Paths to higher productivity and well-being. In S. Maitel (Ed.). *Applied Behavioral Economics, Vol. 2*. New York: University Press.

Townsend, E. (1996). Institutional ethnography: A method for showing how the context shapes practice. *The Occupational Therapy Journal of Research, 16* (3), 179-199.

Townsend, E., Stanton, S., Law, M., Polatajko, H., Baptiste, S., Thompson-Franson, T. et al. (1997). *Enabling occupation: An occupational therapy perspective.* Ottawa, ON: CAOT Publications.

Trief, P. & Donelson, P. (1995). The potential impact of the workers' compensation system on quality of life outcomes: A clinical analysis. Journal of Occupational Rehabilitation, 5, 185-193.

Turnbull, B. (1994). An interview with Maxwell Yalden. *Abilities, (spring)*, 34-38.

Velozo, C. (1993). Work evaluations: Critique of the state of the art of functional assessment of work. *American Journal of Occupational Therapy, 47* (3), 203-209.

Verma, A. (1989). Joint participation programs: Self-help or suicide for labor? *Industrial Relations, 28* (3), 401-410.

Voaklander, D., Beaulne, A. and Lessard, R. (1995). Factors related to outcome following a work hardening program. *Journal of Occupational Rehabilitation, 5* (2), 71-85.

Walker, J. (1992). Injured worker helplessness: Critical relationships and systems level approach for intervention. *Journal of Occupational Rehabilitation, 2*, 201-209.

Wallerstein, N. & M. Weinger. (1992). Health and safety education for worker empowerment. *American Journal of Industrial Medicine, 22,* 619-635.

Walters, T. & Ternette, E. (1994). Discover independent living: National Independent Living Conference 1994. Abilities, Spring (18), 56-57.

Wands, S. & Yassi, A. (1992). "Let's talk back": A program to empower laundry workers. *American J. of Industrial Medicine, 22,* 703-709.

Waters, T. R. & MacDonald, L. A. (2001). Ergonomic job design to accommodate and prevent musculoskeletal disabilities. *Assistive Technology, 13*, 88-93.

Weiner, Y. & Vardi, Y. (1990). Relationships between organizational culture and individual motivation –A conceptual integration. *Psychological Reports, 67,* 295-306.

Westmorland, M., Zeytinoglu, I., Pringle, P., Denton, M. and Chouinard, V. (1998). The elements of a positive workplace environment: Implications for persons with disabilities. *Work, 10*, 109-117.

Whyte, (1991). In J. Wisman (Ed.) *Worker empowerment: The struggle for workplace democracy*. New York: Bootstrap Press.

Whyte, W. F. & Whyte, K. K. (1991). *Making Mondragon*. Ithaca, NY: ILR Press.

Wilcock, A. (1998). *An occupational perspective of health*. Thorofare, NJ: Slack, Inc.

Williams, G. (1984). The genesis of chronic illness: narrative re-construction. *Sociology of Health and Illness, 6* (2), 175-200.

Winnipeg Regional Health Authority. (2000). Two authorities now one. *Interactions, April/May*.

Winnipeg Regional Health Authority. (2003). Retrieved April 2003 from http://www.wrha.mb.ca/employment/pchopps.htm

Wisman, J. (Ed.) (1991). *Worker empowerment: The struggle for workplace democracy*. New York: Bootstrap Press.

Wolcott, H.F. *Writing up qualitative research*. (1990). Newbury Park, CA: SAGE Publications.

Woods, R. (2003). Adam Smith and Karl Marl. Retrieved January 2003 from http://www.honors.unr.edu/~rwoods/wt202/marx.html

Woodward, C., Chambers, L, & Smith, K. (1982). *Guide to improved data collection in health and health care surveys.* McMaster University, Hamilton, ON: Canadian Public Health Association.

Woodward, C. & Chambers, L. (1983). *Guide to questionnaire construction and question writing*. McMaster University, Hamilton, ON: Canadian Public Health Association.

Workers' Compensation Board of Manitoba. (1999-a). *Focus on service: 1998 Annual Report.* Winnipeg, MB: WCB.

Workers Compensation Board of Manitoba. (1999-b). *Managing disability cases: A guide for Manitoba workplaces, 2nd ed.* Winnipeg, MB: WCB Manitoba.

Workers Compensation Board of Manitoba. (1998). *Five year plan.* Winnipeg, MB: WCB Manitoba.

Workers Compensation Board of Manitoba (2000). *Annual Report 1999.* Retrieved May 2002 from www.wcb.mb.ca/annual_report-99

Workers Compensation Board of Manitoba (2001). *Putting our vision to work, Annual Report 2000.* Winnipeg, MB: WCB Manitoba. Retrieved May 2002 from www.wcb.mb.ca/wcbar2000

Workers Compensation Board of Manitoba (2002). *Annual Report 2001.* Retrieved December 2002 from www.wcb.mb.ca/annual_report-01

World Health Organization. (1948). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. Retrieved May 2002 from www.who.int/about/definition/en/

Yassi, A., Cooper, J., Khokhar, J., Guzman, J., & Gauthier, L. (2002). *Primary care and occupational disability study.* Winnipeg, MB: Workers Compensation Board of Manitoba.

Yassi, A., J. Khokhar, R. Tate, J. Cooper, C. Snow, & S. Vallentyne. (1995-a). The epidemiology of back injuries in nurses at a large Canadian tertiary care hospital, Occupational Medicine, 45, 215-220.

Yassi, A. & McLean, D. (2001). Violence in health care. In *Clinics in Occupational and Environmental Medicine/ Occupational Health in the Health Care Industry, 1* (2), 279-303.

Yassi, A., Tate, R. & Cooper, J. (1999). A 5.5-year study of predictors of back injury in a large hospital. International Conference on Occupational Health for Health Care Workers. Montreal, Canada.

Yassi, A., Tate, R., Cooper, J., Jenkins, J. & Trottier, J. (1998). Causes of staff abuse in health care facilities: Implications for prevention. *AAOHN, 46* (10), 484-91.

Yassi, A., Tate, R., Cooper, J., Snow, C., Vallentyne, S. & Khokar, R. (1995-b). Early intervention for back-injured nurses at a large Canadian tertiary care hospital: An evaluation of the effectiveness and cost benefits of a two-year pilot project. *Occupational Medicine, 45* (4), 209-214.

Young, A. and Russell, J. (1995). Demographic, psychometric, and case progression information as predictors of return-to-work in teachers undergoing occupational rehabilitation. *Journal of Occupational Rehabilitation, 5* (4), 219-234.

Zimmerman, M.A. & Rappaport, J. (1988). Citizen participation, perceived control and psychological empowerment. *American Journal of Community Psychology, 16,* 725-750.

Zimmerman, W. (1997). A Canadian perspective. In W. Zimmerman, S. Riessman & D. Shrey, *Strategies for success.* Port Alberni, BC: National Institute of Disability Management and Research.

APPENDICES

Appendix I Survey Questionnaires

UNIVERSITY OF MANITOBA | School of Medical Rehabilitation

Faculty of Medicine
T258-770 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3
Telephone (204) 789-3897
Fax (204) 789-3927

May 15, 2001

RETURN DATE
EXTENDED - JULY 15/01

Dear Worker,

Re: Research study, *Workplace organization, worker participation and return-to-work*

Prevention and management of work-related injuries is an important issue for all workers within the Winnipeg Regional Health Authority (WRHA). This research study in occupational health and safety and return-to-work for injured workers is being carried out by Margaret Friesen, PhD student, with the goal to use the results to improve the safety, health, and work-injury management program for all workers within WRHA.

This survey is one part of a larger study in which we ask you, the "front-line" worker, your opinion about how your workplace manages safety, health and work-related injuries. Please be assured that this information will be confidential – your name and anything you say will not be given to your employer, union representative or anyone else.

The study questions have been reviewed by unions who have members working in health care within WRHA, by the WRHA administration, and by the University of Manitoba Health Research Ethics Board, and have been given approval by all the concerned parties. Please read the information and consent form carefully, sign the consent form, keep one copy, and return the other copy to the researcher along with your survey. Please do not put your name on any other part of the survey. The consent forms will be stored in a locked file cabinet separately from the surveys.

I encourage you to call if you have any questions at all. You may contact me by telephone, fax, or e-mail. I look forward to hearing from many of you within the next few weeks. The completed survey together with one of the signed copies of the consent form may be returned in the enclosed stamped, self-addressed envelope. **Please complete the survey and return by June 4, 2001.**

RETURN DATE
EXTENDED - JULY 15/01

Margaret N. Friesen

Rm. T258 – 770 Bannatyne Ave., University of Manitoba, Winnipeg, MB. R3E 0W3
Phone: 789-3864 Fax: 789-3927 E-mail: mfriese@ms.umanitoba.ca

STUDY ID_____

Workplace Organization, Worker Participation and Return-To-Work: An Employee Survey

Section 1. Information about my background & job activities

1. Male _____ Female _____
2. Current age _____
3. Family status
   - ☐ Married or committed relationship
   - ☐ Single
   - ☐ Children at home Ages: _____
4. Job Title _____
5. Years of experience in your current occupation (or profession or trade) _____
6. Years of experience with this employer (in your current job) _____
7. Salary range (per year):
   - ☐ Less than $20,000
   - ☐ $21,000 to $35,000
   - ☐ $36,000 to $50,000
   - ☐ $51,000 or higher
8. Education or Specialized Training:
   - ☐ Completed some or all of grades 1 to 11
   - ☐ Completed grade 12
   - ☐ Completed 1-2 years of technical school, university, or other training
   - ☐ Completed university degree
9. Have you ever had a work-related injury or illness? _____ YES _____ NO

   If your answer is Yes, please answer the following questions about your most recent injury. If your answer is No, please go on to next page.

   - ☐ What kind of injury or illness did you have?
     - ☐ Injury or illness _____
   - ☐ How long were you away from your job?
     - ☐ 3 weeks or less
     - ☐ Between 3 weeks and 3 months
     - ☐ More than 3 months _____
   - ☐ What kind of treatment or rehabilitation did you have to help you recover and return to work? Check all the treatments or therapy that you received.

     _____Medication _____Surgery
     _____Physiotherapy _____Chiropractic
     _____Occupational therapy _____Work conditioning or work hardening
     _____Other therapy or treatment (please describe) _____

STUDY ID_____

10. Approximately how many employees are there in your workplace?

- ☐ Fewer than 50
- ☐ Between 50 to 100
- ☐ Between 100 to 500
- ☐ Between 500 to 1000
- ☐ Between 1000 to 1500
- ☐ More than 1500

11. How would you describe your agency or workplace?
- ☐ Hospital
- ☐ Community agency
- ☐ Personal care home
- ☐ Other

The following questions ask you to think about how you manage your job activities. Please circle the **best answer** from "not true at all" to "exactly true".

Job activities	**Not true at all 1**	**Hardly true 2**	**Somewhat true 3**	**Exactly true 4**
12. I can always manage to solve tough problems if I try hard enough.	1	2	3	4
13. If someone disagrees with me, I can usually find the means and ways to get what I want.	1	2	3	4
14. I am positive that I can accomplish my goals.	1	2	3	4
15. I am confident I can handle unexpected events.	1	2	3	4
16. Thanks to my common sense, I can handle unusual situations.	1	2	3	4
17. I can solve most problems if I put in the necessary effort.	1	2	3	4
18. I can remain calm when facing difficulties because I can trust in my abilities.	1	2	3	4
19. When I am faced with a problem, I can usually find several solutions.	1	2	3	4
20. If I am in trouble, I can think of a good solution.	1	2	3	4
21. I can handle whatever comes my way.	1	2	3	4

Please go on to Section 2.

STUDY ID_____

SECTION 2 – Information about your workplace

The following questions refer to your current job or your most recent job if you are not currently working. Please circle a number indicating how strongly you agree or disagree with each statement.

At my WORKPLACE...	Strongly agree	Agree	Disagree	Strongly disagree
1. The employer involves employees in plans and decisions made concerning our work.	1	2	3	4
2. Workers have trust in the employer.	1	2	3	4
3. Communication is open and employees feel free to express concerns and make suggestions.	1	2	3	4
4. Working relationships with other workers are cooperative.	1	2	3	4
5. Workers tend to stay with this employer for a long time.	1	2	3	4
6. Top management is actively involved in the safety program.	1	2	3	4
7. The employer spends time and money on improving safety.	1	2	3	4
8. The employer considers that safety is just as important as speed and quality in the way work is done.	1	2	3	4
9. Unsafe working conditions are identified and improved promptly.	1	2	3	4
10. Equipment is well maintained.	1	2	3	4
11. Action is taken when safety rules are broken.	1	2	3	4
12. Employees are provided training in safe work practices for the job hazards they will face.	1	2	3	4
13. Jobs are designed to reduce heavy lifting.	1	2	3	4
14. Jobs are designed to reduce repetitive movements.	1	2	3	4

STUDY ID_____

At my WORKPLACE....	Strongly agree	Agree	Disagree	Strongly disagree
15. Someone from the workplace contacts a worker shortly after an work-related injury or illness to express concern and offer help	1	2	3	4
16. The employer keeps track of the injured worker's absence and return to work	1	2	3	4
17. The employer works with ***WCB and the worker's doctor*** to develop a plan for an injured worker to return to work.	1	2	3	4
18. The employer makes accommodations such as special equipment, flexible hours or modified job duties to allow an injured worker to return to work.	1	2	3	4
19. When the injured worker returns to work, the employer/ facility follows up to adjust the work situation as needed.	1	2	3	4
20. When an injured worker cannot return to his or her previous job, the employer/ provides re-training or re-assignment to a different job.	1	2	3	4
21. Labour and management work as partners in returning an injured worker to work.	1	2	3	4
22. Labour and management work as partners in health and safety.	1	2	3	4

Please go on to Section 3.

STUDY ID_____

SECTION 3 – Information about your work environment

There are 90 statements in this section. They are statements about the place in which you work. The term "supervisor" refers to the boss, manager, department head or the person or persons to whom an employee reports. You are to decide which statements are true about your work environment and which are false. Circle **"T"** for **"True"** or **"F"** for **"False"** in the space next to the statement.

	TRUE	FALSE
1. The work is really challenging.	T	F
2. People go out of their way to help a new employee feel comfortable.	T	F
3. Supervisors tend to talk down to employees.	T	F
4. Few employees have any important responsibilities.	T	F
5. People pay a lot of attention to getting work done.	T	F
6. There is constant pressure to keep working.	T	F
7. Things are sometimes pretty disorganized.	T	F
8. There's a strict emphasis on following policies and regulations.	T	F
9. Doing things in a different way is valued.	T	F
10. It sometimes gets too hot.	T	F
11. There's not much group spirit.	T	F
12. The atmosphere is somewhat impersonal.	T	F
13. Supervisors usually compliment an employee who does something well.	T	F
14. Employees have a great deal of freedom to do as they like.	T	F
15. There's a lot of time wasted because of inefficiencies.	T	F
16. There always seems to be urgency about everything.	T	F
17. Activities are well planned.	T	F
18. People can wear wild looking clothing while on the job, if they want.	T	F
19. New and different ideas are always being tried out.	T	F
20. The lighting is extremely good.	T	F
21. A lot of people seem to be just putting in time.	T	F
22. People take a personal interest in each other.	T	F
23. Supervisors tend to discourage criticisms from employees.	T	F

STUDY ID_____

24. Employees are encouraged to make their own decisions.	T	F
25. Things rarely get "put off till tomorrow."	T	F
26. People cannot afford to relax.	T	F
27. Rules and regulations are somewhat vague and ambiguous.	T	F
28. People are expected to follow set rules in doing their work.	T	F
29. This place would be one of the first to try out a new idea.	T	F
30. Work space is awfully crowded.	T	F
31. People seem to take pride in the organization.	T	F
32. Employees rarely do things together after work.	T	F
33. Supervisors usually give full credit to ideas contributed by employees.	T	F
34. People can use their own initiative to do things.	T	F
35. This is a highly efficient, work-oriented place.	T	F
36. Nobody works too hard.	T	F
37. The responsibilities of supervisors are clearly defined.	T	F
38. Supervisors keep a rather close watch on employees.	T	F
39. Variety and change are not particularly important.	T	F
40. This place has a stylish and modern appearance.	T	F
41. People put quite a lot of effort into what they do.	T	F
42. People are generally frank about how they feel.	T	F
43. Supervisors often criticise employees over minor things.	T	F
44. Supervisors encourage employees to rely on themselves when a problem arises.	T	F
45. Getting a lot of work done is important to people.	T	F
46. There is no time pressure.	T	F
47. The details of assigned jobs are generally explained to employees.	T	F
48. Rules and regulations are pretty well enforced.	T	F
49. The same methods have been used for quite a long time.	T	F
50. The place could stand some new interior decorations.	T	F

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51. Few people ever volunteer.	T	F
52. Employees often eat lunch together.	T	F
53. Employees generally feel free to ask for a raise.	T	F
54. Employees generally do not try to be unique and different.	T	F
55. There's an emphasis on "work before play."	T	F
56. It is very hard to keep up with your workload.	T	F
57. Employees are often confused about exactly what they are supposed to do.	T	F
58. Supervisors are always checking on employees and supervise them very closely.	T	F
59. New approaches to things are rarely tried.	T	F
60. The colours and decorations make the place warm and cheerful to work in.	T	F
61. It is quite a lively place.	T	F
62. Employees who are very different from other workers don't get along very well.	T	F
63. Supervisors expect far too much from employees.	T	F
64. Employees are encouraged to learn things even if they are not directly related to the job.	T	F
65. Employees work very hard.	T	F
66. You can take it easy and still get your work done.	T	F
67. Fringe benefits are fully explained to employees.	T	F
68. Supervisors do not often give in to employee pressure.	T	F
69. Things tend to stay just about the same.	T	F
70. It is rather drafty at times.	T	F
71. It's hard to get people to do any extra work.	T	F
72. Employees often talk to each other about their personal problems.	T	F
73. Employees discuss their personal problems with supervisors.	T	F
74. Employees function fairly independently of supervisors.	T	F
75. People seem to be quite inefficient.	T	F
76. There are always deadlines to be met.	T	F

STUDY ID_____

77. Rules and policies are constantly changing.	T	F
78. Employees are expected to conform rather strictly to the rules and customs.	T	F
79. There is a fresh, novel atmosphere about the place.	T	F
80. The furniture is usually well arranged.	T	F
81. The work is usually very interesting.	T	F
82. Often people make trouble by talking behind others' backs.	T	F
83. Supervisors really stand up for their people.	T	F
84. Supervisors meet with employees regularly to discuss their future work goals.	T	F
85. There's a tendency for people to come to work late.	T	F
86. People often have to work overtime to get their work done.	T	F
87. Supervisors encourage employees to be neat and orderly.	T	F
88. If workers come in late, they can make it up by staying late.	T	F
89. Things always seem to be changing.	T	F
90. The rooms are well ventilated	T	F

Thank you for participating in this survey.
Please place the completed survey along with one copy of the consent form in the stamped self-addressed envelope to:

M. N. Friesen
School of Medical Rehabilitation
Rm. T258 – 770 Bannatyne Ave.
Winnipeg, MB, R3E 0W3

UNIVERSITY OF MANITOBA | School of Medical Rehabilitation

Faculty of Medicine
T258-770 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3
Telephone (204) 789-3897
Fax (204) 789-3927

May 15, 2001

Dear Manager,

Re: Research study – *Workplace organization, worker participation and return-to-work*

Prevention and management of work-related injuries is an important issue for all workers within the Winnipeg Regional Health Authority (WRHA). This research study in occupational health and safety and return-to-work for injured workers is being carried out by Margaret Friesen, PhD student, with the goal of using the results to improve the safety, health, and work-injury management programs for all workers within WRHA.

This survey is one part of a larger study in which we ask you, the managers, your opinion about how your workplace manages safety, health and work-related injuries. Please contact me by telephone ( ) within the next few days to set up an interview time. The interview will take approximately 20-30 minutes of your time and will be carried out by telephone (unless you prefer another means of completing the survey). Please note that we are collecting information about numbers of employees and statistics on work-related injuries (sections are marked with ** in the form), which you are asked to have available at the time of the interview. Please be assured that all information will be confidential – your name or the name of your facility will not be used in any of the analyses or reports.

This study has been reviewed by the unions who have members working in health care within WRHA, by the WRHA administration, and by the University of Manitoba Health Research Ethics Board, and has been given approval by all the concerned parties. Please read the information and consent form carefully, sign the consent form, keep one copy, and return the other copy to the researcher. The consent forms will be stored in a locked file cabinet separately from the surveys.

I encourage you to call if you have any questions at all. You may contact me by telephone, fax, or e-mail. I look forward to speaking with many of you within the next few weeks.

Margaret N. Friesen

Rm. T258 – ~~770~~ Bannatyne Ave., University of Manitoba, Winnipeg, MB. R3E 0W3
Phone: 789-3864 Fax: 789-3927 E-mail: mfriese@ms.umanitoba.ca

STUDY ID_____

ORGANIZATIONAL POLICIES AND PRACTICES

An Employer Survey

apted from R. Habeck, H.A. Hunt, B. VanTol & S. Scully, 1993. *Disability prevention among Michigan employers, Technical Report no. 93-004,* amazoo,MI: Upjohn Institute for Employment Research.

ction 1. FACILITY (Workplace) DESCRIPTION

is section asks some basic questions about **Your Facility** and its various offices. Circle the best response for each n.

1. Does **Your Facility** have more than one physical SITE? YES NO

   Will you be responding with all of these sites in mind, or specifically for the one where you are located?

   1 All facilities | 2 Specific facility where you are located | 3 Other [Specify] _____

   How many sites does **Your Facility** have within the Winnipeg Regional Health Authority? _____

2. "In total, how many full-time employees are working at **Your Facility** this week? By full time, we mean 35 or more hours per week. If **Your Facility** has a different definition of full-time, please note the definition below.

   Definition _____ _____ Full-time

3. "In total, how many part-time employees are working at **Your Facility** this week?
   _____ Part-time

4. "In total, how many casual, temporary, or contract employees are working at **Your Facility** this week?
   _____ Casual _____ Temporary _____ Contract

5. "Total number of employees including both full-time and part-time _____

6. "In total, how many employees worked at Your Facility 3 years ago? _____

7. "Approximately what percent of **Your Facility's** workforce is unionized? _____ %

   Which unions represent employees? _____

   _____

FETY DILIGENCE

This section asks about the strategies and methods **Your Facility** uses to achieve workplace safety. Please rate the extent to which **Your Facility** achieves these practices from "never" to "always".

Safety Diligence	Not Appli-cable	Never (0 %)	Some-times (25%)	Half of the time (50%)	Most of the time (75%)	Always (100%)
a. Unsafe working conditions are identified and promptly improved.	0	1	2	3	4	5
b. **Your Facility** maintains excellent housekeeping.	0	1	2	3	4	5

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c. Equipment is well maintained.	0	1	2	3	4	5
d. Action is taken when safety guidelines are not followed.	0	1	2	3	4	5
e. Supervisors confront and correct unsafe behaviours when they occur.	0	1	2	3	4	5
f. Employees use personal protective equipment where indicated, such as wearing glasses or hearing protection.	0	1	2	3	4	5
g. Health and safety performance is part of the supervisor's annual performance appraisal.	0	1	2	3	4	5

FETY TRAINING

These questions ask about employee and supervisor safety training at **Your Facility**. Please rate the extent to which **Your Facility** achieves these practices from "never" to "always". Circle the best response for each item.

SAFETY TRAINING	**Not applic-able**	**Never (0 %)**	**Some-times (25%)**	**Half of the time (50%)**	**Most of the time (75%)**	**Always (100%)**
a. Employees are trained in safe work practices for the job hazards they will encounter.	0	1	2	3	4	5
b. Supervisors are trained in job hazards and safe work practices for jobs they supervise.	0	1	2	3	4	5
c. Employees and supervisors are trained in how to read WHMIS labels.	0	1	2	3	4	5
d. Employees and supervisors are trained in safe work practices to accommodate a worker with an injury or disability.	0	1	2	3	4	5

GONOMIC PRACTICES

Think about **Your Facility's** ergonomic practices. We are referring to *ergonomics* as approaches to designing work environments and work tools to accommodate individual physical differences. Please rate the extent to which Your Facility achieves these practices from "never" to "always". Circle the best response for each item.

Ergonomic Practices	**Not applic-able**	**Never (0 %)**	**Some-times (25%)**	**Half of the time (50%)**	**Most of the time (75%)**	**Always (100%)**
a. Jobs are designed to reduce heavy lifting.	0	1	2	3	4	5
c. Jobs are designed to reduce repetitive movements.	0	1	2	3	4	5
d. Ergonomic strategies are used to improve workstation design.	0	1	2	3	4	5
d. Work rotation or changes in job responsibilities are used to minimize exposure to ergonomic risks.	0	1	2	3	4	5
e. Ergonomic factors are considered in purchasing new tools, equipment, or furniture.	0	1	2	3	4	5

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f. Workstations are modified to minimize ergonomic risks before injuries occur.	0	1	2	3	4	5
g. Ergonomic approaches are used to assist injured workers in returning to work.	0	1	2	3	4	5

ORK INJURY CASE MANAGEMENT

. We would like you to consider how **Your Facility** handles injury and illness cases when they occur. Rate the extent to which **Your Facility** achieves the following practices for disability case management from "never" to "always".

Work Injury Case Management	**Not applic-able**	**Never (0 %)**	**Some-times (25%)**	**Half of the time (50%)**	**Most of the time (75%)**	**Always (100%)**
a. Someone from **Your Facility** contacts the **injured employee** shortly after a work-related injury or illness to express concern and offer assistance.	0	1	2	3	4	5
b. Someone from **Your Facility** makes follow-up contacts with **employees** who are off work due to work-related injury or illness and assesses their progress toward return to work.	0	1	2	3	4	5
c. Someone from **Your Facility** makes contact with **Workers' Compensation (WCB)** regarding employees off work due to work-related injury or illness to assess their progress toward return to work.	0	1	2	3	4	5
d. Treating physicians (or other health practitioners) are asked to identify employee restrictions and capacities and to specify a target return to work date.	0	1	2	3	4	5
e. Someone from **Your Facility** maintains regular communication with the injured employee's **physician (or health practitioner) and WCB** to facilitate return to work.	0	1	2	3	4	5
f. WCB claims management within **Your Facility** is well coordinated from initial injury to claim resolution.	0	1	2	3	4	5
g. Long duration **(WCB)** claims are evaluated to determine whether more intensive services are required.	0	1	2	3	4	5

STUDY ID_____

PROACTIVE RETURN TO WORK

Think about **Your Facility's** approaches to managing the return to work when work-related injuries or illnesses occur. Please rate the extent to which **Your Facility** achieves these practices from "never" to "always".

Proactive Return To Work	Not appli-cable	Never (0 %)	Some-times (25%)	Half of the time (50%)	Most Of The Time (75%)	Always (100%)
a. **Your Facility** offers job accommodations to enable employees to return to work, for example, modified job duties, flexible schedule, or appropriate equipment.	0	1	2	3	4	5
b. Your Facility provides information to the WCB and the treating physician (or health care practitioner) about the requirements of the injured employee's job.	0	1	2	3	4	5
c. Your Facility provides information to familiarize WCB and the treating physician (or health care practitioner) about modified work available to accommodate work restrictions.	0	1	2	3	4	5
d. After injured or ill employees return to work, **Your Facility** follows up to adjust work situations as needed.	0	1	2	3	4	5
e. When employees return to modified duties, Your Facility develops a plan to transition employees back to regular job duties.	0	1	2	3	4	5
f. When injured or ill employees can't return to their former job, **Your Facility** provides retraining, reassignment, or education.	0	1	2	3	4	5
g. Departments within **Your Facility** cooperate in order to bring injured employees back to work in a timely manner. Check here ___ if Your Facility has no departments.	0	1	2	3	4	5
h. Rehabilitation professionals are used when needed to evaluate work abilities or functional capacity and develop rehabilitation plans to enable return to work.	0	1	2	3	4	5
i. What is the most positive thing about your return-to-work program?						

STUDY ID_____

CTIVE HEALTH AND SAFETY LEADERSHIP

Below is a series of statements about the role of management in supporting health and safety practices at **Your Facility.** Please rate the extent to which ***active*** health and safety leadership is achieved in the following practices from "never" to "always". Circle the best response for each item.

Active Health And Safety Leadership	Not applic-able	Never (0 %)	Some-times (25%)	Half of the time (50%)	Most Of The Time (75%)	Always (100%)
a. Top management is ***actively involved*** in health & safety at your workplace.	0	1	2	3	4	5
b. Top management supports the health & safety coordinator (and/or committee).	0	1	2	3	4	5
c. **Your Facility** spends time and money on improving safety.	0	1	2	3	4	5
d. **Your Facility** considers safety is equally important as speed and quality in the way work is done.	0	1	2	3	4	5
e. **Your Facility** uses WCB injury and illness data to identify problem areas and achieve accountability in safety.	0	1	2	3	4	5
f. **Your Facility** analyzes WCB injury and illness data to identify causes and target solutions.	0	1	2	3	4	5
g. The health and safety committee (or coordinator) has the ***responsibility, authority and resources*** to identify and address safety problems.	0	1	2	3	4	5

OPLE-ORIENTED CULTURE

Below is a series of statements about **Your Facility's** work environment. Please rate the extent to which **Your Facility** achieves each of the following characteristics in its work environment from never to always. Circle the best response for each item. If a work environment description is not applicable to your situation, circle "never".

PEOPLE-ORIENTED CULTURE	Not applic-able	Never (0%)	Some-times (25%)	Half of the time (50%)	Most of the time (75%)	Always (100%)
a. Employees are involved in decisions affecting their daily work.	0	1	2	3	4	5
b. Working relationships are cooperative.	0	1	2	3	4	5
c. There is a high level of trust in the employee/ employer relationship at **Your Facility.**	0	1	2	3	4	5
d. **Your Facility** shares information about the financial status of the **Facility** with employees.	0	1	2	3	4	5
e. Supervisors and managers are trained in interpersonal skills such as effective communication and conflict resolution.	0	1	2	3	4	5
f. Communication is open and employees feel free to voice concerns and make suggestions.	0	1	2	3	4	5

STUDY ID_____

g. Employees are formally included in **Your Facility's** goal setting and planning process. (Formal = written policies or procedures)	0	1	2	3	4	5
h. Employees tend to stay with **Your Facility** for a long time.	0	1	2	3	4	5
i. Employees have ability to control (manage) their own work tasks and schedule.	0	1	2	3	4	5

OINT (Labour-Management) HEALTH & SAFETY COMMITTEE

5. Below is a series of statements about labour and management's joint involvement in health and safety issues. In this section, labour refers to unions that may represent employees. Please check "yes" or "no".

Joint (labour-management) Health & Safety Committee	**YES**	**NO**
a. Does the committee have a role in injury investigations?		
b. Does the committee have a role in Workplace Safety and Health inspections?		
c. Does the committee have a role in education and training for health and safety responsibilities?		
d. Does the committee have a role in the development of new health and safety protocols?		
e. Does the committee have a role in approval of new health and safety protocols?		
f. Does the committee have authority and resources to address (bring about change) health and safety problems within your workplace?		

Below is a series of statements about labour and management's working relationship in joint health and safety issues. Please circle the best answer.

Joint (labour-management) Health & Safety Committee	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
g. Labour and management work cooperatively as partners in health and safety education.	1	2	3	4
h. Labour and management work cooperatively as partners in returning injured workers to work.	1	2	3	4
i. Labour and management maintain positive communication and a cooperative working relationship in solving problems.	1	2	3	4

. Would you have answered any of the above questions differently 6 months ago?

NO (go to 18) ↓ **YES** ↓

STUDY ID_____

Please describe the most significant changes.

Safety Diligence _____

Safety Training _____

Ergonomic Practices _____

Work Injury Case Management

_____

Proactive Return to Work _____

People-Oriented Culture _____

Health & Safety Leadership _____

Labour-Management Health & Safety Committee _____

Employee Benefits _____

_____

ORKERS' COMPENSATION INSURANCE **

The next section calls for specific facts that are essential to determine how the policies and practices in Part I relate to comes such as workers' compensation claims.

a. What are your annual WCB premiums? _____

b. In the last 4 YEARS, have your WCB premiums

1 INCREASED 2 DECREASED 3 STAYED THE SAME

at is Your Facility's practice with regard to managing WCB claims:

c. Does Your Facility dispute/ appeal claims? Please circle the number that best describes your practice.

Never (0 %)	Sometimes (25%)	Half of the time (50%)	Most of the time (75%)	Always (100%)

d. Does Your Facility have a designated staff to manage WCB claims?

YES NO

e. Does WCB have a designated claims adjudicator to work with Your Facility?

YES NO

f. Does Your Facility have a cooperative working relationship with WCB?

YES NO

Please describe _____

Would you have answered any of the WORKERS' COMPENSATION questions differently 6 months ago?

NO ↓ Go to 20. **YES** ↓

STUDY ID_____

Please describe how your management of workers' compensation claims has changed.

_____

ORKERS' COMPENSATION DATA

. We are interested in work-related injuries and illnesses and lost workdays that have occurred at **Your Facility** in the ars 1997-2000. Please complete the following table.

orkers' Compensation Data	1997	1998	1999	2000
Total number of reported (accepted) work-related injuries and illnesses.				
Total number of reported (accepted) cases resulting in lost workdays.				
Total number of lost workdays.				
tal number of reported and accepted cases that involved soft sue strains or sprains.				

IPLOYEE BENEFITS

Please rate the proportion of your workforce that is eligible for the following benefits and programs through **the llective agreement(s) in Your Facility**. Circle the best response for each item.

mployee Benefits	**Not applic-able**	**None (0 %)**	**Some (25%)**	**Many (50%)**	**Most (75%)**	**All (100%)**
Extended health insurance benefits e. dental, vision care)	0	1	2	3	4	5
Paid sick leave	0	1	2	3	4	5
Short term disability benefits	0	1	2	3	4	5
Long term disability benefits	0	1	2	3	4	5
Pension or retirement benefits	0	1	2	3	4	5
Employee assistance program	0	1	2	3	4	5
Paid parental leave programs, such as paid childbirth or leave to take care of sick family members.	0	1	2	3	4	5
Child care benefits including child care mbursement account, on site daycare, and k child benefits	0	1	2	3	4	5

Would you have answered any of the benefits questions differently 6 months ago?

NO YES

What are the most significant benefits changes? _____

n thinking about your answers to these questions, are there any changes you would like to make?

_____

STUDY ID_____

MMENTS:

o you have anything else you would like to add?

_____

_____

hank you for your participation in our survey.

Appendix II General Perceived Self-Efficacy Scale

The General Perceived Self-Efficacy Scale

English version by Ralf Schwarzer & Matthias Jerusalem, 1993, rev. 2000

The following questions ask you to think about how you manage your job activities. Please circle the **best answer** from "not true at all" to "exactly true".

Job activities	Not true at all 1	Hardly true 2	Somewhat true 3	Exactly true 4
1. I can always manage to solve tough problems if I try hard enough.	1	2	3	4
2. If someone disagrees with me, I can usually find the means and ways to get what I want.	1	2	3	4
3. I am positive that I can accomplish my goals.	1	2	3	4
4. I am confident I can handle unexpected events.	1	2	3	4
5. Thanks to my common sense, I can handle unusual situations.	1	2	3	4
6. I can solve most problems if I put in the necessary effort.	1	2	3	4
7. I can remain calm when facing difficulties because I can trust in my abilities.	1	2	3	4
8. When I am faced with a problem, I can usually find several solutions.	1	2	3	4
9. If I am in trouble, I can think of a good solution.	1	2	3	4
10. I can handle whatever comes my way.	1	2	3	4

Appendix III Work Environment Scale

Work Environment Scale (Form R)*

Rudolf H. Moos and Paul N. Insel

There are 90 statements in this section. They are statements about the place in which you work. The term "supervisor" refers to the boss, manager, department head or the person or persons to whom an employee reports.
You are to decide which statements are true about your work environment and which are false. Circle **"T"** for **"True"** or **"F"** for **"False"** in the space next to the statement.

	TRUE	FALSE
1. The work is really challenging.	T	F
2. People go out of their way to help a new employee feel comfortable.	T	F
3. Supervisors tend to talk down to employees.	T	F
4. Few employees have any important responsibilities.	T	F
5. People pay a lot of attention to getting work done.	T	F
6. There is constant pressure to keep working.	T	F
7. Things are sometimes pretty disorganized.	T	F
8. There's a strict emphasis on following policies and regulations.	T	F
9. Doing things in a different way is valued.	T	F
10. It sometimes gets too hot.	T	F
11. There's not much group spirit.	T	F
12. The atmosphere is somewhat impersonal.	T	F
13. Supervisors usually compliment an employee who does something well.	T	F
14. Employees have a great deal of freedom to do as they like.	T	F

* Consulting Psychologists Press, Inc.

15. There's a lot of time wasted because of inefficiencies.	T	F
16. There always seems to be urgency about everything.	T	F
17. Activities are well planned.	T	F
18. People can wear wild looking clothing while on the job, if they want.	T	F
19. New and different ideas are always being tried out.	T	F
20. The lighting is extremely good.	T	F
21. A lot of people seem to be just putting in time.	T	F
22. People take a personal interest in each other.	T	F
23. Supervisors tend to discourage criticisms from employees.	T	F
24. Employees are encouraged to make their own decisions.	T	F
25. Things rarely get "put off till tomorrow."	T	F
26. People cannot afford to relax.	T	F
27. Rules and regulations are somewhat vague and ambiguous.	T	F
28. People are expected to follow set rules in doing their work.	T	F
29. This place would be one of the first to try out a new idea.	T	F
30. Work space is awfully crowded.	T	F
31. People seem to take pride in the organization.	T	F
32. Employees rarely do things together after work.	T	F
33. Supervisors usually give full credit to ideas contributed by employees.	T	F

34. People can use their own initiative to do things.	T	F
35. This is a highly efficient, work-oriented place.	T	F
36. Nobody works too hard.	T	F
37. The responsibilities of supervisors are clearly defined.	T	F
38. Supervisors keep a rather close watch on employees.	T	F
39. Variety and change are not particularly important.	T	F
40. This place has a stylish and modern appearance.	T	F
41. People put quite a lot of effort into what they do.	T	F
42. People are generally frank about how they feel.	T	F
43. Supervisors often criticise employees over minor things.	T	F
44. Supervisors encourage employees to rely on themselves when a problem arises.	T	F
45. Getting a lot of work done is important to people.	T	F
46. There is no time pressure.	T	F
47. The details of assigned jobs are generally explained to employees.	T	F
48. Rules and regulations are pretty well enforced.	T	F
49. The same methods have been used for quite a long time.	T	F
50. The place could stand some new interior decorations.	T	F
51. Few people ever volunteer.	T	F
52. Employees often eat lunch together.	T	F

53. Employees generally feel free to ask for a raise.	T	F
54. Employees generally do not try to be unique and different.	T	F
55. There's an emphasis on "work before play."	T	F
56. It is very hard to keep up with your workload.	T	F
57. Employees are often confused about exactly what they are supposed to do.	T	F
58. Supervisors are always checking on employees and supervise them very closely.	T	F
59. New approaches to things are rarely tried.	T	F
60. The colours and decorations make the place warm and cheerful to work in.	T	F
61. It is quite a lively place.	T	F
62. Employees who are very different from other workers don't get along very well.	T	F
63. Supervisors expect far too much from employees.	T	F
64. Employees are encouraged to learn things even if they are not directly related to the job.	T	F
65. Employees work very hard.	T	F
66. You can take it easy and still get your work done.	T	F
67. Fringe benefits are fully explained to employees.	T	F
68. Supervisors do not often give in to employee pressure.	T	F
69. Things tend to stay just about the same.	T	F
70. It is rather drafty at times.	T	F
71. It's hard to get people to do any extra work.	T	F

72. Employees often talk to each other about their personal problems.	T	F
73. Employees discuss their personal problems with supervisors.	T	F
74. Employees function fairly independently of supervisors.	T	F
75. People seem to be quite inefficient.	T	F
76. There are always deadlines to be met.	T	F
77. Rules and policies are constantly changing.	T	F
78. Employees are expected to conform rather strictly to the rules and customs.	T	F
79. There is a fresh, novel atmosphere about the place.	T	F
80. The furniture is usually well arranged.	T	F
81. The work is usually very interesting.	T	F
82. Often people make trouble by talking behind others' backs.	T	F
83. Supervisors really stand up for their people.	T	F
84. Supervisors meet with employees regularly to discuss their future work goals.	T	F
85. There's a tendency for people to come to work late.	T	F
86. People often have to work overtime to get their work done.	T	F
87. Supervisors encourage employees to be neat and orderly.	T	F
88. If workers come in late, they can make it up by staying late.	T	F
89. Things always seem to be changing.	T	F
90. The rooms are well ventilated	T	F

Appendix IV Organizational Policies and Programs Questionnaire for Employees

ORGANIZATIONAL POLICY AND PROGRAMS – An Employee Survey

The following questions refer to your current job or your most recent job if you are not currently working. Please circle a number indicating how strongly you agree or disagree with each statement.

At my WORKPLACE...	Strongly agree	Agree	Disagree	Strongly disagree
1. The employer involves employees in plans and decisions made concerning our work.	1	2	3	4
2. Workers have trust in the employer.	1	2	3	4
3. Communication is open and employees feel free to express concerns and make suggestions.	1	2	3	4
4. Working relationships with other workers are cooperative.	1	2	3	4
5. Workers tend to stay with this employer for a long time.	1	2	3	4
6. Top management is actively involved in the safety program.	1	2	3	4
7. The employer spends time and money on improving safety.	1	2	3	4
8. The employer considers that safety is just as important as speed and quality in the way work is done.	1	2	3	4
9. Unsafe working conditions are identified and improved promptly.	1	2	3	4
10. Equipment is well maintained.	1	2	3	4
11. Action is taken when safety rules are broken.	1	2	3	4
12. Employees are provided training in safe work practices for the job hazards they will face.	1	2	3	4
13. Jobs are designed to reduce heavy lifting.	1	2	3	4
14. Jobs are designed to reduce repetitive movements.	1	2	3	4

At my WORKPLACE....	Strongly agree	Agree	Disagree	Strongly disagree
15. Someone from the workplace contacts a worker shortly after an work-related injury or illness to express concern and offer help	1	2	3	4
16. The employer keeps track of the injured worker's absence and return to work	1	2	3	4
17. The employer works with ***WCB and the worker's doctor*** to develop a plan for an injured worker to return to work.	1	2	3	4
18. The employer makes accommodations such as special equipment, flexible hours or modified job duties to allow an injured worker to return to work.	1	2	3	4
19. When the injured worker returns to work, the employer/ facility follows up to adjust the work situation as needed.	1	2	3	4
20. When an injured worker cannot return to his or her previous job, the employer/ provides re-training or re-assignment to a different job.	1	2	3	4
21. Labour and management work as partners in returning an injured worker to work.	1	2	3	4
22. Labour and management work as partners in health and safety.	1	2	3	4

Appendix V Organizational Policies and Programs Questionnaire for Managers

ORGANIZATIONAL POLICIES AND PRACTICES – An Employer Survey

SAFETY DILIGENCE					
a. Unsafe working conditions are identified and promptly improved.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. **YOUR FACILITY** maintains excellent housekeeping.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. Equipment is well maintained.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. Action is taken when safety guidelines are not followed.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. Supervisors confront and correct unsafe behaviours when they occur.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
f. Employees use personal protective equipment where indicated, such as wearing glasses or hearing protection.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. Health and safety performance is part of the supervisor's annual performance appraisal.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
SAFETY TRAINING					
a. Employees are trained in safe work practices for the job hazards they will encounter.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. Employees and supervisors are trained in how to read WHMIS labels.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. Employees and supervisors are trained in safe work practices to accommodate a worker with an injury or disability.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
ERGONOMIC PRACTICES					
a. Jobs are designed to reduce heavy lifting.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. Jobs are designed to reduce repetitive movements.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

c. Ergonomic strategies are used to improve workstation design.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. Work rotation or changes in job responsibilities are used to minimize exposure to ergonomic risks.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. Ergonomic factors are considered in purchasing new tools, equipment, or furniture.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
f. Workstations are modified to minimize ergonomic risks before injuries occur.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. Ergonomic approaches are used to assist injured workers in returning to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
WORK INJURY CASE MANAGEMENT					
a. Someone from **YOUR FACILITY** contacts the **injured employee** shortly after a work-related injury or illness to express concern and offer assistance.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. Someone from **YOUR FACILITY** makes follow-up contacts with **employees** who are off work due to work-related injury or illness and assesses their progress toward return to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. Someone from **YOUR FACILITY** makes contact with **Workers' Compensation (WCB)** regarding employees off work due to work-related injury or illness to assess their progress toward return to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. Treating physicians (**either directly or through WCB**) are asked to identify employee restrictions and capacities and to specify a target return to work date.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. Someone from **YOUR FACILITY** maintains regular communication with the injured employee's **physician and WCB** to facilitate return to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

f. WCB claims management within **YOUR FACILITY** is well coordinated from initial injury to claim resolution.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. Long duration (**WCB**) claims are evaluated to determine whether more intensive services are required.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
PROACTIVE RETURN TO WORK					
a. **YOUR FACILITY** offers job accommodation to enable employees to return to work, for example, modified job duties, flexible schedule, or appropriate equipment.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. **YOUR FACILITY** provides information to the **WCB and the treating physician** about the requirements of the injured employee's job.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. **YOUR FACILITY** provides information to familiarize **WCB and the treating physician** about modified work available to accommodate work restrictions.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. After injured or ill employees return to work, **YOUR FACILITY** follows up to adjust work situations as needed.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. When employees return to modified duties, YOUR **FACILITY** develops (or cooperates with) a plan to transition employees back to regular job duties.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
f. When injured or ill employees can't return to their former job, **YOUR FACILITY** provides retraining, reassignment, or education.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. Departments within **YOUR FACILITY** cooperate in order to bring injured employees back to work in a timely manner.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
h. Rehabilitation professionals are used when needed to evaluate work abilities or functional capacity and develop rehabilitation plans to enable return to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

ACTIVE HEALTH AND SAFETY LEADERSHIP					
a. Top management is ***actively involved*** in health & safety at your workplace.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. Top management supports the health & safety coordinator (or committee.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. **YOUR FACILITY** spends time and money on improving safety.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. **YOUR FACILITY** considers safety equally with production (speed) and quality in the way work is done.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. **YOUR FACILITY** uses WCB injury and illness data to identify problem areas and achieve accountability in safety.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
f. **YOUR FACILITY** analyzes WCB injury and illness data to identify causes and target solutions.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. The health and safety committee (or coordinator) has the ***responsibility, authority and resources*** to identify and address safety problems.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

h. I would like you to think about how you have answered questions up to now. Please verify that these answers apply only to work-related injuries or illnesses.

YES **NO**

i. Is your management of non-work-related illnesses and injuries different or the same as work injuries?

DIFFERENT **SAME**

PEOPLE-ORIENTED CULTURE					
a. Employees are involved in decisions affecting their daily work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
b. Working relationships are cooperative.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

c. There is a high level of trust in the employee/ employer relationship at **YOUR FACILITY.**	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
d. **YOUR FACILITY** shares information about the financial status of the FACILITY with employees.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
e. Supervisors and managers are trained in interpersonal skills such as effective communication and conflict resolution.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
f. Communication is open and employees feel free to voice concerns and make suggestions.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
g. Employees are <u>formally</u> included in **YOUR FACILITY'S** goal setting and planning process. (Formal refers to written policies or procedures such as regular meetings to obtain employee input.)	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
h. Employees tend to stay with **YOUR FACILITY** for a long time.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
i. Employees have ability to control (manage) their own work tasks and schedule.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

LABOUR-MANAGEMENT HEALTH & SAFETY COMMITTEE

b. Labour and management work cooperatively as partners in health and safety.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. Labour and management work cooperatively as partners in returning injured workers to work.	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)
c. Labour and management maintain positive communication and a cooperative working relationship at **YOUR FACILITY.**	NEVER (0 %)	SOMETIMES (25%)	HALF OF THE TIME (50%)	MOST OF THE TIME (75%)	ALWAYS (100%)

Appendix VI Scoring and Data Entry of Variables for Surveys

Employee Survey

VARIABLE	DESCRIPTION	CODING/SCORING	COMMENTS
Gender		Male = 1 Female = 0	
Age		Actual value	
Family	Spouse and children	Married no children =1 Single no children =2 Married with children=3 Single with children = 4	Transformed to 2 two dichotomous variables for the purpose of analysis: one is the relationship status where 1=relationship and 0 = single; the other is family where 1=children at home, and 2=no children at home.
Occupation	Nurse – RN, PHN, RPN Health care aide Professional, other than Nurse Other	RN HCA PROF OTHER	All nurses including public health nurse, general duty nurse, nurse-therapist, nurse-educator into the RN category – combined all health care assistant personnel who appeared to be involved in direct patient care. This included licensed practical nurses, health care aides or assistants, nurse aides, orderlies, and resident assistants. - included all professional occupations besides RN such as medical technologist, occupational therapist, social worker, radiation technologist, recreation worker, and resource coordinator - included all clerical, maintenance, non-skilled workers, and assistants who were not involved with patient care
Salary		salary under 20,000 = 1 21,000 –35,000 = 2 36,000 –50,000 = 3 over 50,000 = 4	Salary categories were adjusted from the responses on the survey to a full-time-equivalent when compared with union agreement scales and found to differ This was necessary because the survey question did not adjust for part-time salaries.
Education		less than grade 12 = 1 grade 12 = 2 1-2 years post-secondary (tech or college) = 3 university degree = 4	
Years experience in career		YREXP	actual years experience in one's profession, trade or occupation
Job experiences		Job Exp	actual years experience with this employer in this job
Work Injury	Back inj. Mskgen. Other	Yes/No	Back injury = included all injuries which involved a back injury Mskgeneral included all RSI, CTS and Other = burns, cuts.

VARIABLE	DESCRIPTION	CODING/SCORING	COMMENTS
Time loss injury	Treatment (TX) = Medication, Surgery, physiotherapy, occupational therapy, Work conditioning or work hardening, Chiropractic, Other	0 = no injury and no time loss 1 = less than 3 weeks time loss 2 = 3 weeks to less than 3 months time loss 3 = more than 3 months time loss	This variable was collapsed into 3 groups: those with no injury and no time loss, those with injury but less than 3 months time loss, and those with more than 3 months time loss. A second analysis also collapsed the four categories into three groups as: 0 = no injury, 1 = time loss <3 weeks, 2 = ≥ 3 weeks. Although treatment was collated from the survey responses, it was decided not to include it in the analyses
Workplace		Hospital = 1 Community agency = 2 Personal care home = 3 Other = 4	For purpose of analysis, "other" was included with community agencies.
Size of Workplace		Less than 50 = 1 51-100 = 2 101-500 = 3 501-1000 = 4 1001-1500 = 5 more than 1500 = 6	These categories were collapsed into 4 categories with 1 and 2 combined and 5 and 6 combined
Self-Efficacy Score		10 to 40	Sum score of all values, range of 10 to 40
Organizational Policies And Programs Employee (OPP-E) People oriented culture (POC) Active safety leadership (AcSL) Safety diligence (Sdil) Safety training (Strg) Ergonomics (Erg) – Disability case monitoring (DCM) Proactive RTW (RTW) Labour-management cooperation (LaM)	 5 questions 3 questions 3 questions 1 question 2 questions 3 questions 3 questions 2 questions	 0 to 20 0-12 0-12 0-4 0-8 0-12 0-12 0-8	
WORK ENVIRONMENT SCALE (WES) Involvement (I) Peer cohesion (PC) Supervisor Support (SS) Autonomy (A) Task orientation (TO) Work Pressure (WP) Clarity (C) Managerial Control (Ctl) Innovation (Inn) Physical Comfort (Com)	9 items under each variable	Each item scored from 0 to 9	

Facility/ Manager Survey

VARIABLE	DESCRIPTION	CODING/SCORING	COMMENTS
Type of workplace	Hospital Community agency Personal care home or Long term care centre Other	1 2 3 4	
Size of workplace		20 to 50 employees = 1 51-100 = 2 101-500 = 3 501-1000 = 4 1001-1500 = 5 > 1500 = 6	Where size of workplace was considered in the analysis, categories were collapsed into four with 1 and 2 combined, and 5 and 6 combined.
Percentage of employees unionized			
Benefits	8 questions	values from 0-40	
WCB dedicated staff		Yes or No	
Cooperative relationship with WCB		Yes or No	
Appeals	percentage of claims appealed	0%, 25%, 50% 75% 100%	
WCB rate	premium per $100 of payroll	Actual value	
Work injury incidence (2000)		Actual number of injuries during the year 2000	
Time loss days (2000)		Actual number of days	
Soft tissue injuries (MSK) (2000)			
Equivalency hours for full-time employees	Number of employees calculated by use of FTE		
Average duration of time-loss injury		No. of days	Used data from Manitoba Workplace Safety & Health

VARIABLE	DESCRIPTION	CODING/SCORING	COMMENTS
Organizational Policies And Programs Manager (Opp-M)	Each question had five possible responses: None = 0%, Sometimes = 25%, Half the time = 50%, Most of the time = 75%, All the time = 100%.		
OPP-SD - Safety diligence	7 questions	0-35	
OPP-STrg - Safety training	4 questions	0-20	
ERG - Ergonomics	7 questions	0-35	
DCM – Disability case monitoring	7 questions	0-35	
RTW - Pro-active RTW	8 questions	0-40	
SL - Active safety leadership	7 questions	0-35	
POC - People oriented culture	9 questions	0-45	
LaMR - Labour-management roles	Yes/No and 6 questions	Yes = 1 No = 0 Values 0 to 6	
LaMR - Labour-management responsibilities	3 questions	Values from 0-16	

Dealing with Missing Values

For demographic values:

- Age – take mean age of all participants in the same occupational group and apply it to the missing value
- Family – separate into two sets of variables – relationship or single, plus children or no children; this enabled use of all the available data

- Salary – if missing, calculated mean salary of others in same occupation
- Size of workplace (check against type of workplace) - this was a problem area since respondents sometimes indicated a number that would suggest a unit or department rather than the number of employees in the entire facility. I'll do some work to gather the range of number of employees in hospitals, in personal care homes and community agencies.
- Type of workplace –re-code if possible. Based on information from the rest of the survey, it may be possible to determine whether "other" is actually a community agency such as home care.
- For scale values: "not applicable" item = 0; unmarked item = .

Appendix VII Tables and Figures

Table A1 Correlation Matrix for Employee Survey Variables

	GENDER	AGE	MARITAL STATUS	FAMILY STATUS	YREXP	YRCURR	SALARY	EDUC	SIZEWP	TYPEWP	SELF-EFF	OPP-POC
GENDER	1.00											
AGE		1.00										
MARITAL			1.00									
FAMILY			.335**	1.00								
YREXP		.596**		.166**	1.00							
YRCURR		.501**		.174**	.691**	1.00						
SALARY					.321**	.277**	1.00					
EDUC		-.178**					.3 86**	1.00				
SIZEWP		.137*				.132*	.139*		1.00			
TYPEWP	-.149*		-.174**		-.199**	-.234**	-.207**		-.530**	1.00		
SELFEFF								.151*			1.00	
OPP-POC												1.00
OPP-AcSL								-.136*				.593**
OPP-SD												.606**
OPP-STRG												.434**
OPP-ERG		.131*								.141*		.454**
OPP-DCM												.402**
OPP-RTW											.135*	.432**
OPP-LaM												.449**
WES.I	-.140*									-.145*		.545**
WES.PC								.172**		-.177**		.452**
WES.SS						-.146*						.610**
WES.A		-.124*		.150*				.140*			.123*	.364**
WES.TO								.142*				.498**
WES.WP			.138*				.183**	.176**		-.205**		-.295**
WES.C		.141*										.593**
WES.Ctl												.145*
WESInn					-.127*							.453**
WES.Com			.140*				-.228**		-.160*	.141*		.350**
RN	-.214**		.128*		.195**		.489**	.370**	.150**	-.278**		
HCA	.140*						-.286**	-.326**		.261**		
PROF							.132**	.224**				
OTHERJB			-.192*	-.160*	-.228**		-.396**	-.325**	-.167*	.131*		
BACKINJ												
MSKGEN					.127*						.148*	
OTH.INJ						.129*						
HOSP	.123*		.200**		.188**	.218**	.203**		.514**	-.977**		
PCH									-.397**-	.585**		
COMM			-.192**	-.167**	-.138*	.221**	-.157*		.276**	.653**		
TIMELS (3 wks)		.131*			.173**	.190**				-.140*		-.135*

Table A1, continued

	OPP-AcSL	OPP-SD	OPP-ST	ERG	DCM	RTW	OPP.LaM	WES.I	WES-PC	WES-SS	WES-A	WES-TO
GENDER												
AGE												
MARITAL												
FAMILY												
YREXP												
YRCURR												
SALARY												
EDUC												
SIZEWP												
TYPEWP												
SELFEFF												
OPP-POC												
OPP-AcSL	1.00											
OPP-SD	.704**	1.00										
OPP-STRG	.609**	.595**	1.00									
OPP-ERG	.542**	.536**	.533**	1.00								
OPP-DCM	.484**	.460**	.548**	.477**	1.00							
OPP-RTW	.517**	.442**	.477**	.442**	.637**	1.00						
OPP-LaM	.555**	.542**	546**	.476**	.722**	.786**	1.00					
WES.I	.327**	.346**	.276**	.335**	.291**	.265**	.276**	1.00				
WES.PC	.255**	.233**	.189**	.178**	.186**	.203**	.195**	.649**	1.00			
WES.SS	.405**	.437**	.348**	.362**	.411**	.429**	.419**	.540**	.448**	1.00		
WES.A	.299**	.226**	.181**	.229**	.298**	.287**	.309**	.446**	.432**	.517**	1.00	
WES.TO	.339**	.390**	.270**	.287**	.338**	.264**	.286**	.617**	.521**	.470**	.268**	1.00
WES.WP	-.359**	-.281**	-.237**	-.296**	-.157*	-.213**	-.211**			-.334**	-.135*	
WES.C	.563**	.616**	.535**	.482**	.385**	.385**	.443**	.495**	.397**	.603**	.309**	.532**
WES.Ctl	.191**	.358**	.267**	.125*	.192**		.183**				-.154*	.223**
WESInn	.350**	.368**	.301**	.286**	.359**	.362**	.340**	.479**	.332**	.505**	.449**	.296**
WES.Com	.410**	.424**	.246**	.314**	.223**	.294**	.324**	.306**	.240**	.339**	.249**	.306**
RN				-.152*				.127*	.245**		.148*	.125*
HCA				.1.36**					-.235**		-.124*	-.203*
PROF												.131*
OTHERJB								-.167**	.124*		-.146*	
BACKINJ					-.171**	-.188**	-.181**	-.145*		-.123*		
MSKGEN												
OTH.INJ												
HOSP				-.126*				.151*	.206**			
PCH	.202**	.218**	.173**	.220**	.157*	.162*	.189**					
COMM			-.195**		-.143*	-.142*	-.165**	-.150*	-.197**			
TIMELS (3 wks)				-.127*	-.204**	-.153*	-.212**			-.138**		

Table A1, continued

	WES-WP	WES-CI	WES-Ctl	WES-Inn	WES-Com	RN	HCA	PROF	OTH-JOB
GENDER									
AGE									
MARITAL									
FAMILY									
YREXP									
YRCURR									
SALARY									
EDUC									
SIZEWP									
TYPEWP									
SELFEFF									
OPP-POC									
OPP-AcSL									
OPP-SD									
OPP-STRG									
OPP-ERG									
OPP-DCM									
OPP-RTW									
OPP-LaM									
WES.I									
WES.PC									
WES.SS									
WES.A									
WES.TO									
WES.WP	1.00								
WES.C	-.374**	1.00							
WES.Ctl		.291**	1.00						
WESInn		.322**		1.00					
WES.Com	-.251**	.433**		.316**	1.00				
RN	.210**		.126*		-.129*	1.00			
HCA	-.206**					-.469**	1.00		
PROF						-.336**	-.265**	1.00	
OTHERJB	-.130*					-.378**	-.277**	-.214**	1.00
BACKINJ				-.174**	-.126*				
MSKGEN									
OTH.INJ									
HOSP	.226**	.127*			-.128*	.291**	-.283**		
PCH			.192**		.124*		.140*		
COMM	-.162**		-.164**			-.217**	.200**		
TIMELS (3 wks)				-.188**					

Table A1, continued

	BACK INJ.	MSK-GEN	OTH. INJ	HOSP	COMM	PCH	TIMELS
GENDER							
AGE							
MARITAL							
FAMILY							
YREXP							
YRCURR							
SALARY							
EDUC							
SIZEWP							
TYPEWP							
SELFEFF							
OPP-POC							
OPP-AcSL							
OPP-SD							
OPP-STRG							
OPP-ERG							
OPP-DCM							
OPP-RTW							
OPP-LaM							
WES.I							
WES.PC							
WES.SS							
WES.A							
WES.TO							
WES.WP							
WES.C							
WES.Ctl							
WESInn							
WES.Com							
RN							
HCA							
PROF							
OTHERJB							
BACKINJ	1.00						
MSKGEN	-.213**	1.00					
OTH.INJ	-.195**	-.141*	1.00				
HOSP				1.00			
PCH				-.516**	1.00		
COMM				-.705**	-.189**	1.00	
TIMELS (3 wks)	.583**	.383**	.267**			-.142*	1.00

FACTOR ANALYSES

A number of factor analyses (FA) were applied to both the employee data and the manager data, using various groupings of variables. Following the initial factor analysis using all variables, it was clear that some type of selection process would be needed to clarify the constructs being examined. The patterns that emerged from this initial factor analysis reinforced the systems model of RTW since it identified components related to workplace, worker, and injury. Although one component may have reflected the construct of worker participation, it was determined that a simpler model to clarify the construct of worker participation would be more helpful.

The initial factor analysis (using all variables, non-rotated) resulted in 13 components with an eigenvalue of 1 or higher Table A2). An examination of the components matrix and the scree plot (Figure A1) showed there were five components that accounted for approximately 48% of the variance. In order to further clarify patterns among the variables, a varimax orthogonal rotation was applied, then an oblique rotation analysis (Norman & Streiner, 1999-b; Portney & Watkins, 2000). The oblique rotation appeared to present the clearest patterns among the variables (Table A3) and resulted in five components accounting for 48% of the total variability.

Table A2 Factor Analysis of Employee Variables (Principal Components)

	Initial Eigenvalues			Extraction Sums of Squared Values		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.639	19.097	19.097	7.639	19.097	19.097
2	4.334	10.835	29.933	4.334	10.835	29.933
3	2.806	7.016	36.949	2.806	7.016	36.949
4	2.303	5.757	42.706	2.303	5.757	42.706
5	2.166	5.416	48.122	2.166	5.416	48.122
6	1.718	4.295	52.418			
7	1.630	4.074	56.492			
8	1.537	3.844	68.335			
9	1.296	3.241	63.576			
10	1.278	3.194	66.770			
11	1.187	2.968	69.739			
12	1.049	2.622	72.361			
13	1.002	2.506	74.867			

All the OPP-E themes and all except two of the WES themes (work pressure and managerial control) loaded onto Component 1. Since the two scales, OPP and WES, were designed to measure aspects of workplace culture such as safety, ergonomics, and supervisor support, this component was labeled "workplace culture". Component 2 appeared to load primarily on the "type and size of workplace". Since the hospital, by "type of workplace" category, employed the largest number of people represented by this sample, it was also the major variable represented on this component. Component 3 appeared to reflect age and years of experience as the major factor, and was termed as the "worker age" or worker demographic factor. Component 4 reflected the back injury variable as well as the treatment and time loss variables, and was termed the "injury" factor. Component 5 loaded primarily on the RN, or "occupation" variable, which, in this context, was also reflective of higher salary and higher education. Several of the WES themes (involvement, peer cohesion, autonomy), specifically those that might reflect "workplace participation", were part of the fifth component as well as part of the first component.

Table A3 Factor Analysis for Employee Variables – Oblique Rotation

	Component				
	1	2	3	4	5
	Workplace Culture	**Type of Workplace**	**Worker Age**	**Injury**	**Occupation**
Gender		.276			-.291
Age		-.141	.704	.119	
Single/ma		.165	.205		.204
None/Chld				.171	.211
YR.EXP.			.754	.135	.215
YR.CURR.		.110	.726		.113
salary		.116	.313		.553
education					.606
TYPE-WK		-.925		.262	
SELF-EFF					.227
OPP-POC	.769				
OPP-AcSL	.761		.147		-.170
OPP-Sdil	.759		.177		-.225
OPP-Strg	.660	.137	.252		-.123
OPP-ERG	.687				-.181
OPP-DCM	.621		.272	-.233	
OPP-RTW	.655		.157	-.247	
OPP-LaM	.641		.231	-.270	
WES-1	.672		-.242		.337
WES-PC	.563		-.207		.456
WES-SS	.766		-.219		.143
WES-A	.508		-.223		.365
WES-TO	.614				.331
WES-WP	-.370	.102	-.119		.356
WES-C	.801				
WES-Ctl	.225		.198		-.172
WES-Inn	.615		-.326		
WES-Corn	.505	-.199			-.133
Nurse		.113		.129	.712
HCA		-.141	-.112	.307	-.619
BackInj				.633	-.273
Community	-.190	-.591	-.243		-.121
Hospital		.938			
PCH	.114	-.619	.302		
MskGen			.166	.274	
Otherlnj		.200		.167	
OtherJob -				-.409	-.141
TIMELS	-.134	.146		.854	-.170
TmLoss-3 wks	-.104	.136		.869	-.178
Size wkplace		.725			

These five components may all be said to fit within the theoretical model of RTW (Figure 3, Chapter 2) in that they are located within the model. Two of the components reflected the importance of the workplace in the model—"workplace culture" and the "type and size of the workplace". Two of the components reflected the importance of the worker characteristics, i.e. "age" and "occupation". One component reflected the importance of the injury and could also be termed a worker variable i.e. the injured worker. The other variables and systems in the model such as the insurance or healthcare systems do not appear to be reflected in the factor analysis.

Another factor analysis was applied to all the variables with a selection of respondents that had a time-loss injury of more than 3 weeks. Non-rotated, this analysis resulted in 11 components with an eigenvalue greater than 1, accounting for 83% of the variation. Examination of the scree plot (Figure A3) suggested a cut-off point at 5 components, accounting for approximately 59% of the variation (Table A7). The component labeled "workplace culture" reflected themes associated with all the OPP-E themes and WES themes with the exception of managerial control and with a negative loading of work pressure. Component 2, termed "type of workplace", was primarily loaded onto the type and size of workplace, as well as the family status variables of marital status and children. The third component, labeled "worker", appeared to be driven by worker demographic variables of age, years of work experience, salary, education, and by the injury variables of back injury and other musculoskeletal injury. Component 4, labeled "occupation", appeared to be loaded primarily onto gender, health care aide, disability case management, and negatively loaded onto the RN or nurse variable as well as the WES themes of involvement, peer cohesion, supervisor support, and autonomy. Component 5 could be labeled the "injury" factor and was driven by the back injury and personal care home variables and negatively by other injuries and other jobs.

Because all components in this factor analysis, which was restricted to include only cases that had injury loss greater than three weeks, were similar in configuration to the initial factor analysis that did not discriminate based on time-loss injuries it was determined that it did not reflect any potential differences between the injured workers and the non-injured workers.

Table A4. Factor Analysis with Time-Loss > 3 Weeks – Oblique Rotation

	Component				
	1	2	3	4	5
	Workplace Culture	Type of Workplace	Worker	Occupation	Injury
SELF-EFP			.273	-.214	.432
OPP-POC	.802	-.138	.142	-.139	
OPP-AcSL	.773		.292		.230
OPP-Sdil	.800		.243	.106	.260
OPP-Strg	.822		.254	.103	.168
OPP-ERG	.810			.136	.192
OPP-DCM	.716			.361	-.135
OPP-RTW0	.767	-.157		.199	-.313
OPP-Lam	.727			.256	-.153
WES-I	.671	-.108	-.111	-.512	
WES-PC	.461			-.523	.152
WES-SS	.718		-.234	-.370	
WES-A	.647	.134	-.172	.514	
WES-TO	.729			-.258	
WES-WP	-.641		.169		.149
WES-C	.744		.204	-.175	.198
WES-Ctl	.145		.194	.352	.130
WES-Inn	.602		-.390		
WES-Com	.379	.275	.101	-.201	
Gender		-.351		.540	
Age	.346		.536	145	
Single/Ma		.535	-.209		.105
None/Chld	-.249	374	.227		.375
YR.EXP.	.138		.660	-.235	
YR. CURR.			.778		
salary			.545	-.357	.194
education	.145		.347	-.378	-.234
TYPE-WK	-.232	.914			
Nurse	.123	.312	-.128	-.597	.305
HCA	-.160	.122	-.183	.781	.125
BackInj			-.603		.696
Community	-.260	.620	-.249		-.291
Hospital	.145	-.930			
PCH		.624	163	.150	.418
MskGen		.259	.539	.121	-.249
Otherinj		-.245	.181		-.663
OtherJob	.335	.233		-.191	-.514
Size wkplace using 4 categories		-.707			

Figure A1 Scree Plot for Factor Analysis of Employee Variables

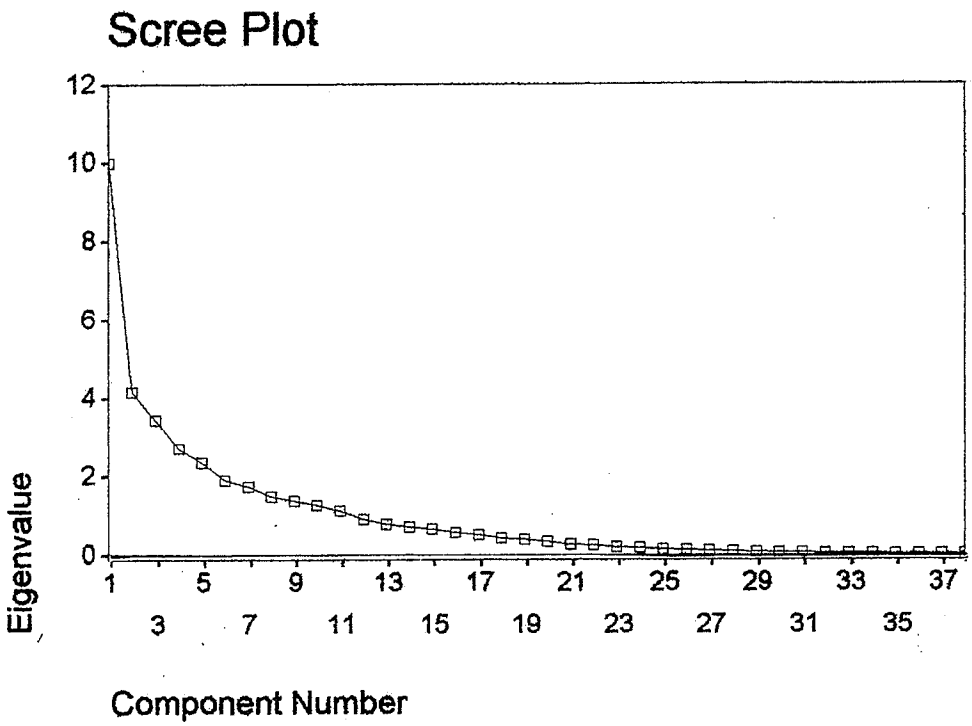

Figure A2 Scree Plot for Factor Analysis of Three Measurement Scales

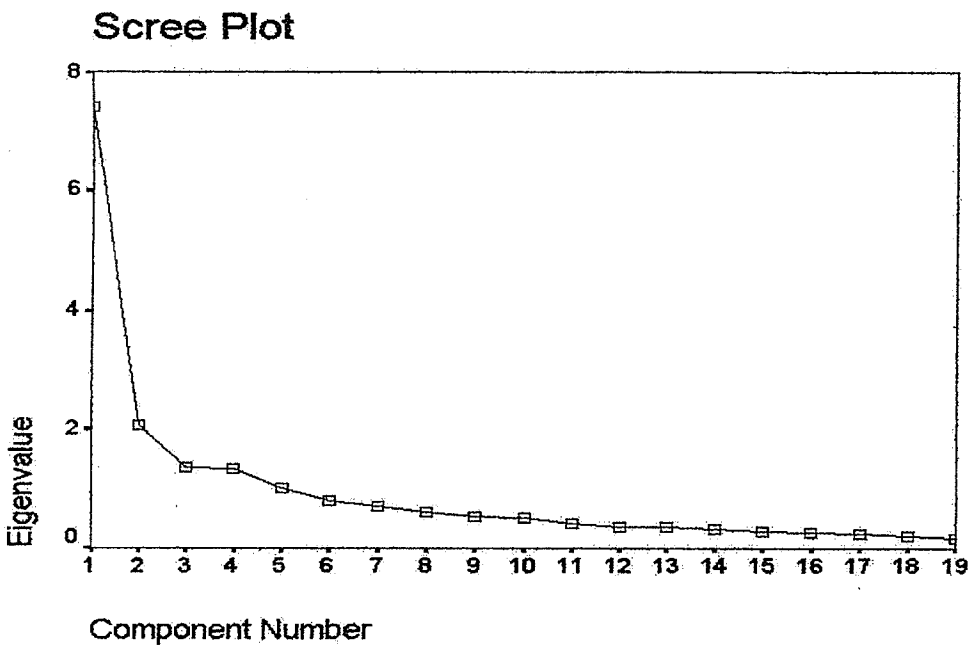

Table A5 Factor Analysis of Three Measurement Scales

Component	Initial Eigenvalues.			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.410	39.000	39.000	7.410	39.000	39.000
2	2.062	10.852	49.851	2.062	10.852	49.851
3	1.355	7.129	56.981	1.3555	7.129	56.981
4	1.336	7.032	64.013	1.336	7.032	64.013
5	1.011	5.320	69.333	1.011	5.320	69.333
6	.803	4.224	73.557			
7	.714	3.760	77.317			
8	.615	3.236	80.553			
9	.536	2.821	83.374			
10	.515	2.709	86.083			
11	.415	2.184	88.267			
12	.371	1.955	90.221			
13	.355	1.870	92.091			
14	.317	1.669	93.760			
15	.282	1.486	95.246			
16	.270	1.419	96.665			
17	.243	1.279	97.944			
18	.211	1.109	99.053			
19	.180	.947	100.000			

Table A6 Factor Analysis of Measurement Scales –Oblique Rotation

	Component				
	1	2	3	4	5
	RTW	Workplace Culture	Work Stress	Managerial Control	Self-efficacy
SELF-EFF					.956
OPP-POC	.203	.463	-.338		
OPP-AcSL	.274		-.535	.185	.239
OPP-Sdil	.310		-.471	.351	.168
OPP-Strg	.435		-.313	.293	.255
OPP-ERG	.352		-.451	.138	.119
OPP-DCM	.891				
OPP-RTW	.915				
OPP-LaM	.961				
WES-I		.857			
WES-PC	-.112	.879	.115		.126
WES-SS	.175	.551	-.328	-.191	
WES-A	.108	.488	-.109	-.505	.247
WES-TO		.787		.280	
WES-WP	.105	.194	.917	.205	
WES-C		.445	-.515	.282	
WES-Ctl				.827	
WES-Inn	.285	.527		-.272	
WES-Com		.307	-.442		-.129

Table A7 Factor Analysis with Time-Loss > 3 Weeks – Oblique Rotation

	Component				
	1	2	3	4	5
SELF-EFP			.273	˙214	.432
OPP-POC	.802	-.138	.142	-.139	
OPP-AcSL	.773		.292		.230
OPP-Sdil	.800		.243	.106	.260
OPP-Strg	.822		.254	.103	.168
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Gender		-.351		.540	
Age	.346		.536	145	
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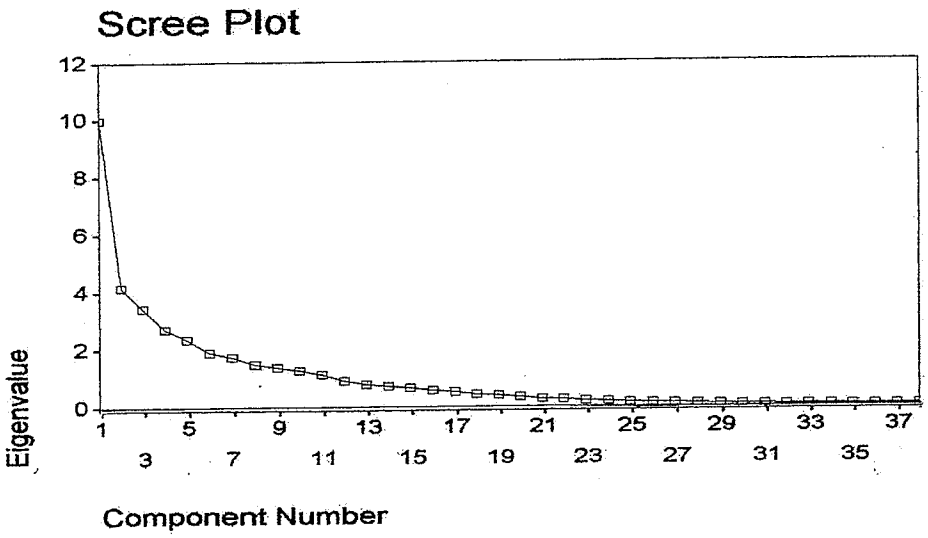
salary			.545	-.357	.194
education	.145		.347	-.378	-.234
TYPE-WK	-.232	.914			
Nurse	.123	.312	-.128	-.597	.305
HCA	-.160	.122	-.183	.781	.125
BackInj			-.603		.696
Community	-.260	.620	-.249		-.291
Hospital	.145	-.930			
PCH		.624	163	.150	.418
MskGen		.259	.539	.121	-.249
Otherinj		-.245	.181		-.663
OtherJob - non RN, non HCA	.335	.233		-.191	-.514
Size wkplace using 4 categories		-.707			

Figure A3 Scree Plot for Factor Analysis of Employee Variables with Time-Loss > 3 Weeks



Appendix VIII Ethics Approval Letters

UNIVERSITY
OF MANITOBA

BANNATYNE CAMPUS
Research Ethics Boards

P126-770 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3
Tel: (204) 789-3255
Fax: (204) 789-3414

APPROVAL FORM

Principal Investigator: Ms. Margaret Friesen

Protocol Reference Number: H2001:048
Date: May 9, 2001

Protocol Title: **Workplace organization, worker participation and return-to-work**

The following are approved for use:

- **Research Proposal, dated March 2000**
- **Cover Letter to Managers, dated May 7, 2001**
- **Cover Letter to Workers, dated May 11, 2001**
- **Informed Consent Form (Survey), dated May 9, 2001**
- **Informed Consent Form (Interview), dated May 9, 2001**
- **Employer Survey**
- **Employee Survey**

The above was approved by Dr. A. Katz, Chair, Health Research Ethics Board, Bannatyne Campus, University of Manitoba on behalf of the committee per your letter received May 9, 2001. The Research Ethics Board is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement, and the applicable laws and regulations of Manitoba.

This approval is valid for one year only. A study status report must be submitted annually and must accompany your request for reapproval. Any significant changes of the protocol and informed consent form should be reported to the Chair for consideration in advance of implementation of such changes. The REB must be notified regarding discontinuation or study closure.

This approval is for the ethics of human use only. For the logistics of performing the study, approval should be sought from the relevant institution, if required.

Sincerely yours,

Alan Katz, MB., Ch.B., MSc. CCFP, FCFP.
Chair,
Health Research Ethics Board
Bannatyne Campus

Please quote the above protocol reference number on all correspondence.
Inquiries should be directed to the REB Secretary
Telephone: (204) 789-3883 / **Fax:** (204)789-3414

UNIVERSITY
OF MANITOBA

BANNATYNE CAMPUS
Research Ethics Boards

P126-770 Bannatyne Avenue
Winnipeg, Manitoba
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Tel: (204) 789-3255
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APPROVAL FORM

Principal Investigator: Ms. Margaret Friesen

Protocol Reference Number: H2001:048
Date: October 22, 2002

Protocol Title: **Workplace organization, worker participation and return-to-work**

The following is/are approved for use:

- **Annual Approval**

The above was approved by Dr. A. Katz, Chair, Health Research Ethics Board, Bannatyne Campus, University of Manitoba on behalf of the committee per your letter dated October 17, 2002. The Research Ethics Board is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement, and the applicable laws and regulations of Manitoba. The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards defined in Division 5 of the *Food and Drug Regulations*.

This approval is valid for one year only. A study status report must be submitted annually and must accompany your request for re-approval. Any significant changes of the protocol and informed consent form should be reported to the Chair for consideration in advance of implementation of such changes. The REB must be notified regarding discontinuation or study closure.

This approval is for the ethics of human use only. For the logistics of performing the study, approval should be sought from the relevant institution, if required.

Sincerely yours,

Alan Katz, MD., Ch.B., CCFP, FCFP
Chair,
Health Research ~~Ethics Board~~
Bannatyne Campus

Please quote the above protocol reference number on all correspondence.
Inquiries should be directed to the REB Secretary
Telephone: (204) 789-3255/ **Fax:** (204) 789-3414

VICTORIA
GENERAL
HOSPITAL

October 3, 2001

Ms. Margaret N. Friesen, M.Ed., B.O.T., PhD Cand.
School of Medical Rehabilitation
Faculty of Medicine
T258-770 Bannatyne Avenue
Winnipeg, Manitoba
R3E 0W3

Department of Research
and Evaluation
2340 Pembina Highway
Winnipeg, Mb, R3T 2E8

Dear Ms. Friesen:

Re: Access to Victoria General Hospital for Study Entitled
"Work Organiation, Worker Participation and Return to work"

I am pleased to inform you that your request for research access to the Victoria General Hospital has been approved. You may proceed with your study on the understanding that:

1) Any significant changes in your proposal will be submitted to the attention of the Department of Research & Evaluation prior to implementation.

2) You notify us when your data collection is complete. This information helps us to coordinate research access requests and minimize competing demands of research studies on patients and hospital staff time.

3) The research investigations will provide the Victoria General Hospital with a summary report of the research findings upon completion.

4) Jason Marchand, Chief HR Office, Victoria General Hospital (477-3310), Mike Mencik, HR Coordinator, (477-3251), and Norma Fonger, Staff Health Nurse, (477-3322) will be your site contact people. Mike Mencik and Norma Fonger will be the staff that will assist you concerning the surveys.

Please feel free to contact me should you have any questions, concerns or encounter any site related difficulties during the course of your data collection. We wish you success with your study.

Sincerely

Norma N. Fonger - 18/oct/02

Ben Berkal
Acting Director
Department of Research & Evaluation

BB:eya

cc: Dr. J.D. Scurrah
D. Brown
J. Marchand
M. Mencik
R. Racette
B. Brundson-Clark
N. Fonger

Appendix IX Information and Consent Forms

1. Survey Participants (Employee and Manager) and
2. Interview Participants

UNIVERSITY OF MANITOBA | School of Medical Rehabilitation

Faculty of Medicine
T258-770 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3
Telephone (204) 789-3897
Fax (204) 789-3927

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

Title of Study: **Workplace organization, worker participation and return-to-work**

Principal Investigator:
Margaret N. Friesen,
Division of Occupational Therapy, University of Manitoba,
T258 – 770 Bannatyne Ave. Winnipeg, R3E 0W3. Phone:

Co-Investigators:
Thesis advisory committee:
Dr. Annalee Yassi, University of Manitoba, Community Health Sciences.
Dr. Juliette Cooper, University of Manitoba, School of Medical Rehabilitation
Dr. Tom Hassard, University of Manitoba, Community Health Sciences.
Dr. Ted Redekopp, Manitoba Labour, Workplace Safety and Health

Introduction

You are being asked to participate in a research study. Please take your time to review this consent form and discuss any questions you may have with the investigator. You may take your time to make your decision about participating in this study and you may discuss it with your friends, family before you make your decision. This consent form may contain words that you do not understand. Please ask the investigator to explain any words or information that you do not clearly understand.

Purpose of Study

The purpose of this research study is to examine what are the relationships between organizational structures in the workplace, worker participation (in the organization and in return-to-work (RTW), and RTW outcomes. Specifically, the study will seek to answer the following questions:

What are the relationships of worker participation to return-to-work within the context of the organizational structures in the workplace?
What is the experience of worker participation in return-to-work by workers who have experienced time-loss injury within the past year?

A total of ***approximately 1300*** participants will participate in this study.

Study procedures

This study will consist of filling in a questionnaire about your workplace and its policies and practices in workplace safety and health and management of work-related injuries.

Your participation in this study is completely voluntary, and you can refuse to answer any question or stop participating at any time without any negative consequences to your job or your care.

A summary of the results of this study will be available for publication in your union's newsletter or in the Workplace Safety & Health newsletter. You may also request a written summary directly from the researcher.

Risks and Discomforts

There are no risks to your physical safety in this study. You may experience some difficulty or discomfort in thinking about the answers to the questions. Please be aware that your participation in this study will not be discussed with anyone in your workplace or your union. If you have concerns about answering any of the questions, please call the researcher to discuss them.

Benefits

You may or may not benefit by participating in this study. We hope the information learned from this study will benefit other workers.

Costs/Payment

There are no costs to your participation in this study and there is no payment for participation.

Confidentiality

Information gathered in this research study may be published or presented in public forums (using grouped data), however your name will not be used or revealed.

All questionnaires will be coded by number and the returned questionnaires will be stored separately from any identifying information. All information will be stored in a locked file cabinet in a locked office. Following the study, the original survey data will be destroyed.

In some types of research such as that in which participants share information about infectious diseases or reportable crimes, your personal information may be disclosed if required by law.

Organizations that may inspect and/or copy your research records for quality assurance and data analyses include the thesis advisory committee and the University of Manitoba Health Research Ethics Board.

Voluntary Participation/Withdrawal from the Study

Your decision to take part in this study is voluntary. You may refuse to participate or you may withdraw from the study at any time. Your decision to not participate or to withdraw from the study will not affect your job or care for your health in any way.

Questions

You are free to ask any questions that you may have about your treatment and your rights as a research participant. If any questions come up during or after the study contact the researcher: ***Margaret Friesen at***

For questions about your rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204) 789-3389.

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had the opportunity to discuss this research study with *Margaret Friesen (_____)*. I have had my questions answered by her in language I understand. The risks and benefits have been explained to me. I understand that I will keep a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of any of my records that relate to this study by The University of Manitoba Research Ethics Board for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

Participant signature_____

Participant printed name: _____

Date: _____

If you are under 18 years of age, please have your parent or legal guardian sign this consent form.

Parent or guardian signature _____

Parent or guardian printed name_____

Date _____

UNIVERSITY OF MANITOBA | School of Medical Rehabilitation

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Winnipeg, Manitoba
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Telephone (204) 789-3897
Fax (204) 789-3927

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

Title of Study: **Workplace organization, worker participation and return-to-work**

Principal Investigator:
Margaret N. Friesen,
Division of Occupational Therapy, University of Manitoba,
T258 – 770 Bannatyne Ave. Winnipeg, R3E 0W3. Phone:

Co-Investigators:
Thesis advisory committee:
Dr. Annalee Yassi, University of Manitoba, Community Health Sciences.
Dr. Juliette Cooper, University of Manitoba, School of Medical Rehabilitation
Dr. Tom Hassard, University of Manitoba, Community Health Sciences.
Dr. Ted Redekopp, Manitoba Labour, Workplace Safety and Health

Introduction

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The purpose of this research study is to examine what are the relationships between organizational structures in the workplace, worker participation (in the organization and in return-to-work (RTW), and RTW outcomes. Specifically, the study will seek to answer the following questions:

What are the relationships of worker participation to return-to-work within the context of the organizational structures in the workplace?
What is the experience of worker participation in return-to-work by workers who have experienced time-loss injury within the past year?

Study procedures

This study will consist of an interview with the investigator which will take about one to 1½ hours. The interview will be audiotaped. You will be asked to talk about your experience of having a work injury and the process of coming back to work. The main question will be:

"Please describe your experience in recovering from your work-related injury. Tell me about how you were involved in keeping up to date with information, or making decisions about your treatment, and rehabilitation to help you get back to work."

Your participation in this study is completely voluntary, and you can refuse to answer any question or stop participating at any time without any negative consequences to your job or to your care for your health.

A summary of the results of this study will be available for publication in your union's newsletter or in the Workplace Safety & Health newsletter. You may also request a written summary directly from the researcher.

Risks and Discomforts

There are no risks to your physical safety in this study. You may experience some difficulty or discomfort in thinking about the answers to the questions in the survey. Please be aware that your participation in this study will **not** be discussed with anyone in your workplace or your union.

Benefits

You may or may not be benefit by participating in this study. We hope the information learned from this study will benefit other workers.

Costs/Payment

There are no costs to your participation in this study and there is no payment for participation.

Confidentiality

Information gathered in this research study may be published or presented in public forums, (using grouped datat) however your name will not be used or revealed.

All questionnaires will be coded by number and the returned questionnaires will be stored separately from any identifying information. All information will be stored in a locked file cabinet in a locked office. All audiotapes will be erased following completion of the study.

In some types of research such as that in which participants share information about infectious diseases or reportable crimes, your personal information may be disclosed if required by law.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include the thesis advisory committee and the University of Manitoba Health Research Ethics Board.

Voluntary Participation/Withdrawal from the Study

Your decision to take part in this study is voluntary. You may refuse to participate or you may withdraw from the study at any time. Your decision to not participate or to withdraw from the study will not affect your job or care for your health in any way.

Questions

You are free to ask any questions that you may have about your treatment and your rights as a research participant. If any questions come up during or after the study or if you have a research-related injury, contact the researcher: ***Margaret Friesen at***

For questions about your rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204) 789-3389.

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had the opportunity to discuss this research study with *Margaret Friesen (_____)*. I have had my questions answered by her in language I understand. The risks and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of any of my records that relate to this study by The University of Manitoba Research Ethics Board for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

Participant signature_____

Participant printed name: _____

Date: _____

If you are under 18 years of age, please have your parent or legal guardian sign this consent form.

Parent or guardian signature _____

Parent or guardian printed name:_____

Date: _____

Appendix X Letters of Support from Unions

Winnipeg Regional Health Authority
Office régional de la santé de Winnipeg

1800-155 Carlton St.
Winnipeg, Manitoba
R3C 4Y1 CANADA
Tel. 204 / 926.7000
Fax 204 / 926.7007
www.wrha.mb.ca

155, rue Carlton, suite 1800
Winnipeg, Manitoba
R3C 4Y1 CANADA
Tél. 204 926.7000
Téléc 204 926.7007
www.wrha.mb.ca

August 16, 2000

Ms. Janice Meszaros
Community Initiatives Program and
Research Officer
Workers' Compensation Board
333 Broadway
WINNIPEG, MB R3G 1M2

Dear Ms. Meszaros:

RE: WORK ORGANIZATION, WORKER PARTICIPATION & RETURN TO WORK RESEARCH PROJECT BY MARGARET N. FRIESEN

This letter is in support of the proposed research study that addresses an important issue in occupational health – that of return-to-work for injured workers and how we can address this most effectively in the workplace and by greater involvement of the worker. One of the goals of the WRHA is to bring down costs in workplace injury and to develop pro-active programs in injury prevention, early return-to-work and accommodation for work disability.

I believe that this research combined with Dr. Yassi's proposal for assessment and development of a coordinated occupational health strategy for the WRHA will give us the essential tools to meet our goals in this area.

Yours very truly,

Wayne K. Byron,
Vice President Human Resources

:ah
c.c. B. Postl, CEO WRHA
K. Grant-Hill, Coordinator Disability Management/Health & Safety
M. Friesen

MGEU

Manitoba Government and General Employees' Union

601-275 Broadway
Winnipeg, Manitoba
Canada R3C 4M6

Tel: (204) 982-6432
Fax: (204) 942-2146
1-800-262-8891
www.mgeu.mb.ca

The Pas
Tel: (204) 623-6766
Fax: (204) 623-3229
1-800-390-3954

Dauphin
Tel: (204) 638-5322
Fax: (204) 638-9825
1-800-251-4381

Brandon
Tel: (204) 571-4470
Fax: (204) 571-4472
1-800-848-7074

Portage la Prairie
Tel: (204) 239-8690
Fax: (204) 239-8692
1-800-204-4186

Selkirk
Tel: (204) 482-7801
Fax: (204) 785-8653
1-800-882-9613

Thompson
Tel: (204) 778-4383
Fax: (204) 677-2924
1-800-250-2244

May 23, 2001

Dear Member:

The prevention and management of work-related injuries is a prime concern for MGEU members, especially those working on the "front-lines" of health care. That's why we felt it was important to work in cooperation with the School of Medical Rehabilitation to ensure research into this area reflects as broad and accurate picture as possible.

We believe that the information gathered from you, our members, can help both unions and employers in their efforts to improve workplace health and safety programs throughout the province. All answers will be kept strictly confidential.

If you have any questions or concerns, please feel free to call Brenda Hasiuk at .

In Solidarity,

Peter Olfert
MGEU President

Operating Engineers of Manitoba

August 24th, 2000

Sent by Fax

Ms. Janice Meszaros
Director, Community Initiative
and Research Program
Workers Compensation Board of Manitoba
333 Broadway Avenue
Winnipeg, Mb. R3C 4W3

Dear Ms. Meszaros:

Re: Project: Work Organization / Workers Participation & Return to Work

The Union supports the research project Margaret Friesen has proposed.

The Union certainly agrees to get the injured worker back to the workplace quicker so he may return to his normal life style.

If there is anything else I can help you with please feel free to contact me.

Yours truly,

Belinda Blanchard
Business Representative
Operating Engineers of Manitoba
Local 987

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International Union of Operating Engineers
Local Union No. 987, 987A, 987B, 987C, and 987D
1008 Wall Street, Winnipeg, Manitoba R3G 2V3
General Office: (204) 786-8658 Fax: (204) 786-6578

MANITOBA COUNCIL OF HEALTH CARE UNIONS

MNU
CUPE
MGEU
MAHCP
IUOE
SEIU
PSAC
PIPSC

502-275 Broadway
Winnipeg, Manitoba
R3C 4M6

Tel: (204) 942-1320
Fax: (204) 942-0958

March 16, 2001

Ms. Daria McLean
Managing Investigator
Occupational Health Project
NA618 - 700 McDermott Avenue
Winnipeg, Manitoba
R3E 0T2

Dear Daria:

Re: WCB Funding of the Project "Towards Building an Effective and Efficient Regional Occupational Health Program for the Healthcare Sector in Winnipeg"

This is to inform you the members of the MCHCU recognize this initiative in Occupational Health and Safety is long overdue and we endorse this project within the WRHA.

We will participate, however, this does not negate in any way our rights and obligations under the various Collective Agreements. The members of MCHCU wish to be kept closely apprised of all facets of the project. It is our understanding there are members of the WRHA-MCHCU Steering Committee on this Project Review Committee. The eight unions which comprise the MCHCU are the ones listed in this letterhead margin.

If you require any further information or clarification you can contact me at the Manitoba Nurses' Union office at 942-1320.

Yours truly,

Irene Giesbrecht
Chairperson, MCHCU

cc MCHCU
Wayne Byron, WRHA

WCB-MCHCU.DOC
IG/tw
opeiu/342

CUPE·SCFP
On the front line • Au coeur de l'action
Canadian Union of Public Employees
Syndicat canadien de la fonction publique

MANITOBA REGIONAL OFFICE
703 – 275 Broadway, Winnipeg, MB R3C 4M6, (204) 942-0343, Fax: (204) 956-7071 cupe.ca scfp.ca

SENT VIA: COURIER

August 24, 2000

Ms. Janice Meszaros
Community Initiatives Officer
WCB of Manitoba
333 Broadway
Winnipeg, Manitoba
R3C 4W3

Dear Ms. Meszaros:

RE: FUNDING PROPOSAL FOR WORK ORGANIZATION, WORKER PARTICIPATION AND RETURN TO WORK

CUPE represents the majority of healthcare workers here in the Province of Manitoba. It has been our experience that members are continually sustaining workplace injuries such as stress, lower back, violence, critical, incidents, post-traumatic stress, etc. With the implementation of this research study, we will be able to define and therefore prevent workplace injuries within the Healthcare Sector of Winnipeg.

In closing, CUPE proudly supports this research study.

Sincerely,

MAUREEN MORRISON
ACTING REGIONAL DIRECTOR
GS/ss/Opeiu: 491

cc: P. Moist, R. Malazdrewich, L. Sigurdson, L. Bowman, G. Smith

CUPE·SCFP
On the front line • Au coeur de l'action
Canadian Union of Public Employees
Syndicat canadien de la fonction publique

MANITOBA REGIONAL OFFICE
703 – 275 Broadway, Winnipeg, MB R3C 4M6, (204) 942-0343, Fax: (204) 956-7071 cupe.ca scfp.ca

SENT VIA: COURIER

August 24, 2000

Mr. Wally Fox-Decent
Chairperson
WCB of Manitoba
333 Broadway
Winnipeg, Manitoba
R3C 4W3

Dear Mr. Fox-Decent:

RE: REGIONAL OCCUPATIONAL HEALTH PROGRAM FOR WINNIPEG'S HEALTH CARE SECTOR

All of us here at CUPE are very excited about the initiative underway to implement a comprehensive Occupational Health Services Program.

As you may know, CUPE represents the majority of healthcare workers in Manitoba. Consequently our members continually experience loss of work due to workplace injuries, stress, violence, chemical exposure, just to name a few. It has also been our experience that members will find themselves having to prove to the insurance carriers that they are in fact in some way disabled and cannot continue to work. This creates added stress and discomfort to our healthcare workers. A high percentage of workplace injuries are preventable. With the implementation of this program, CUPE believe the statistics on workplace injuries should fall dramatically, as finally there would be preventative measurers and education in place.

In closing, CUPE supports an effective Regional Occupational Health Program for the Healthcare Sector in Winnipeg.

Sincerely,

MAUREEN MORRISON
ACTING REGIONAL DIRECTOR
GS/ss/Opeiu: 491

cc: P. Moist, R. Malazdrewich, L. Sigurdson, L. Bowman, G. Smith

Manitoba Nurses' Union

502•275 Broadway Winnipeg, Manitoba R3C 4M6
(tel) 204•942•1320 (fax) 204•942•0958

Web Site: www.nursesunion.mb.ca
E-Mail: mnu@mb.sympatico.ca

October 16, 2000

Mr. Wally Fox-Decent
Chairman of the Workers Compensation Board
333 Broadway
Winnipeg, Manitoba
R3C 4W3

Dear Mr. Fox-Decent:

RE: RESEARCH GRANT APPLICATION – MS. DARIA McLEAN REGIONAL OCCUPATIONAL HEALTH PROGRAM FOR HEALTH CARE SECTOR IN WINNIPEG

Ms. McLean has approached the Workers Compensation Board for monetary support to fund a research grant that would provide review, needs assessment, and strategies in health care occupational safety and health support services.

The Manitoba Council of Health Care Unions has reviewed and discussed this issue and would like to support the initiative of Ms. McLean to the Workers Compensation Board for grant funding.

Occupational Health and Safety has taken a backseat to other health care issues over the last number of years. The net result has seen an alarming increase in muscular skeletal injuries as well as a number of other health and safety concerns.

The Department of Workplace Safety and Health has approached health sector labour groups to express their concern. They hope to get some awareness and education to begin developing strategies to reduce workplace injuries.

Ms. McLean's research is a critical and long needed precursor to a joint health sector workplace health and safety strategy. Discussions between management and labour have begun and this grant application is a key preliminary component.

BR/dmw/opeiu/342

Again, MCHCU supports this application for WCB funding and hopes it leads to a safer workplace and reduces the number of injuries and costs of the WCB.

I will follow this up with a call to your office and if there are questions don't hesitate to call ( ) and ask for Bob Romphf (MNU, Labour Relations Officer).

Yours truly,

Bob Romphf
Labour Relations Officer

c.c.: Irene Giesbrecht, MCHCU
✓ Daria McLean, RN - D.O.E.M. – HSC
Lanette Bowman, CUPE
Margaret Day, MGEU

BR/dmw/opeiu/342

August 17, 2000

Mr. W. Fox-Decent
Chairperson, Workers Compensation Board
Community Initiatives –Service Committee
333 Broadway
Winnipeg MB R3C 4W3

Dear Mr. Fox-Decent

Re: Occupational Health Program – Healthcare Sector

Our union is pleased to provide support for the proposal submitted by the University of Manitoba in conjunction with the Winnipeg Regional Health Authority.

Our work with MGEU members who are employees of the WRHA has uncovered a number of limitations regarding the delivery of Occupational Health Services. Examples of areas that require attention are:

- establishing and training of H & S committees;
- inconsistent programming and policy on biohazards and chemicals;
- workplace violence prevention programs; and
- musculoskeletal problems resulting in numerous WCB & LTD claims.

We support the proposal to conduct a needs assessment to determine the extent of occupational health services currently delivered. The needs assessment will help determine the future delivery of a comprehensive and consistent approach of occupational health services which will benefit workers, employers, the WCB, Workplace Safety & Health and the state of healthcare generally.

It is critical that healthcare unions have a role in this project and work together with the University and the WRHA.

We commend the Service Committee for considering this proposal.

Yours truly,

Peter Olfert
President

PO/jc