DISABILITY MANAGEMENT STRATEGIES:

A PRELIMINARY INVESTIGATION OF PERCEPTIONS, POLICIES AND RETURN-TO-WORK OUTCOMES.

by

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Abstract

The objectives of this retrospective study were to (a) examine the predictive value of DM perceptions and DM policies in return-to-work outcomes for the injured worker; (b) examine factors that influence DM perceptions, DM policies, and Return-to-work outcomes; and (c) examine the relationship between demographic factors of the individual and return to work outcomes. Employers from a Northern BC community were randomly selected to participate. Analysis of the data supported the hypothesis that company perception towards DM is a significant contributing factor to the presence of DM policies in the workplace. The study draws particular attention to the need for collaboration with WCB to supplement claims data reported by employers. Interestingly, the instrument constructed for the study shows potential. With further development the tool may be valuable in identifying incongruent attitudes towards DM between different levels of an organization. As a future direction this would merit additional investigation.

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Disability Management Strategies:

A Preliminary Investigation of Perception, Policy and Return-to-work Outcomes.

Many employers have implemented Disability Management (DM) strategies in the workplace as a means of containing their disability costs. Measuring the success of DM in terms of cost containment is well documented throughout the literature. While this economic benefit is a valuable incentive for employers to initiate DM, the primary focus of DM is the individual worker and his employability when disability has occurred. Changing the outcome criteria from cost containment to employability poses a greater challenge to measuring the success of DM (Butler, Baldwin & Johnson, 1995). In looking at return-to-work rates, these authors found that injured workers did not sustain their employment over time. From the initial return-to-work rate of 85% for injured Canadian workers, the rate dropped to 35% when maintenance of employment was monitored. These findings are based on the return-to-work rates for injured workers during 1989 to 1990. At that time Canadian involvement in DM was in its infancy. It is only within the past decade that an increasing amount of Canadian employers are utilizing DM strategies to return injured workers to the workforce. The benefit of DM is based on the assumption that workplace accommodations mitigate disability associated with impairments facilitating continued employment for that worker. To test this assumption this study examines disability management policies, perceptions and return-to-work outcomes. Employers in a Northern B.C. community were surveyed and organizational policies and perceptions towards DM were examined. The aim was to measure the ability of policies and perceptions to predict return-to-work outcomes for employees who sustained a compensable injury covered by Workers' Compensation Board of British Columbia (WCB). The literature review provides an account of the context that

led to the emergence of disability management and the organizational and individual factors that influence return to work outcomes. Following the presentation of the methodological framework for this study, data analyses are presented in the Results section. The final section presents the discussion concerning the implications of the findings and future direction for research and disability management.

The principles of disability management

DM is described by Shrey (1996) as a paradigm shift in the world of rehabilitation. This shift is primarily due to its workplace focus. Generally, DM is defined as a proactive, employer-based prevention and remediation strategy developed to (a) prevent the occurrence of accidents and disability, (b) to mitigate the effects through early intervention and return-to-work options when disability does occur, and (c) decrease lost time by maintaining the occupational bond and availing of optimum timing for return to work (Habeck, Leahy, Hunt, Chan, & Welch, 1991; Shrey, 1998; Westmorland & Buys, 2002). DM is based on the empirically supported premise that an early return-to-work facilitates the continued relationship between worker and employer (Habeck, 1999; Habeck, Hunt, & VanTol, 1998; Lacerte & Wright, 1992). DM has a broader perspective of the rehabilitation process that promotes disability prevention strategies, rehabilitation treatment concepts, and return-to-work programmes aimed at preserving the working relationship. The effectiveness of any programme for managing disability relies on a combination of philosophical and operational components that involves the interplay of employers' goals and resources with employees' needs and expectations. The role of the workplace and the interaction between the employee and the work environment, therefore, represent a very significant part in the outcome of the work disability process (Habeck, Hunt, & VanTol, 1998).

The context of disability management

The escalating economic cost associated with workplace disability was the impetus for research into the advantages of disability management. Concurrent with rising costs, policy initiatives such as the Employment Equity Act (1984), the Duty to Accommodate enshrined in the Canadian Human Rights Code, and the "reasonable accommodations" provision of the Americans with Disabilities Act (ADA, 1990), were making it expedient for employers to explore new solutions to mitigate the consequences of disability (Howe & Johnson, 2000; Traver, 1990). A companion factor for stimulating research in DM was the changing nature and direction of service provision within the field of rehabilitation. In the United States, for example, the 1979 amendments to the Vocational Rehabilitation Act (1973) resulted in a demarcation of service provision. Individuals with more severe and/or congenital disabilities became the service responsibility of government funded agencies whereas acquired and/or less severe disabilities were serviced by private rehabilitation (McMahon, 1983). Another influence to permeate the development of disability management was legislative change that placed responsibility for injured workers with the employer. The workers' compensation model utilized in Australia, for example, obliges employers to provide return-to-work assistance for injured workers (Kenny, 1995). Regulations such as the Occupational Health and Safety Act (1978) in Canada entrusted responsibility to employers and employees for the creation of joint committees to control and improve workplace hazards (Canadian Centre for Occupational Health and Safety, 1999). This inducement for co-operation laid the necessary foundation of participatory, working relationships between employers and employees to aid the development of disability management.

Further facilitating the development of DM, in addition to legislative changes, was the review of the medical model and its role in disability. The medical model is based on the management of disease whereas DM is based on the management of disability. The return to work process of DM aims at taking advantage of residual functional capabilities whereas the medical model aims at maximum medical recovery. To Lacerte & Wright (1992) the traditional medical and pathological orientation to determine work disability hinders the return to work process. Unless the impairment is assessed in relation to the actual functional capabilities of the individual the disparity between the medical model and the orientation of DM model may delay or jeopardize a return to work (Greenwood, 1984). The limitations of the medical model are also reviewed by Loisel et al. in their research on back pain (Losiel, Durnad, Bertelette, Vézina, Baril, Gagnon, et al., 2001). These authors posit that disability is a multi-faceted problem requiring a broadening of the medical model. Proposing that the determinants of work disability incorporate medical, personal, and environmental aspects successful intervention, therefore, implies the adoption of a rehabilitation approach that addresses the various facets of disability and links interventions to the workplace.

The concept of disability being a multi-faceted problem was initially introduced by the World Health Organization (WHO) Expert Committee in their 1976 and 1981 Reports. The WHO promoted the concept of disability as dimensional and outlined the following operational definitions and processes of disability:

> 1. Impairment – any loss or abnormality of psychological, physiological or anatomical structure or function.
> 2. Disability – any restriction or lack of ability to perform an activity in the manner or within the range considered normal.
> 3. Handicap – a disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfillment of a role that is normal for that individual (p.8).

WHO also clarified three levels of prevention aimed at reducing the impact of disability: (1) reducing the occurrence of impairments; (2) limiting or reversing disability caused by impairment; and (3) preventing the transition of disability into handicap (p.9). Influenced by this theoretical approach, the early concept of 'preventative rehabilitation' posited by Jarvikoski & Tuunainen (1978) is cited throughout the literature as the origin of disability management. The authors introduced work-based interventions aimed at containing withdrawal from the workplace if functional abilities became impaired (Jarvikoski & Lahelma, 1980, 1981; Jarvikoski & Tuunainen, 1978). Workplace based interventions were seen as fundamental in circumventing permanent exclusion from the workforce. Thus, the burgeoning of the private rehabilitation sector, legislative initiatives and the growing supposition that rehabilitation was not merely restorative in nature were important antecedents to employers becoming active agents in the whole rehabilitation process.

The context of rehabilitation also changed from the clinic to the workplace. Shrey (1998) describes the basic principles of disability management that emphasize the direct involvement of the employer to secure job retention and accommodations for the injured worker. Shrey (1998) argues that "worksite-based disability management interventions capitalize on the therapeutic value of working while the worker is recovering from an injury or illness" (p.390). Recovery from injury or illness should not be an isolated event – "the focus is on enabling the worker to get well while working rather than waiting for the worker to get well in order to return to work" (Shrey, 1998, p.391). As research demonstrates, disability is a complex issue that extends beyond the medical condition and pathological findings. Yelin, Henke, & Epstein (1986) examined the differences that distinguished workers and non workers with musculoskeletal disease and reported that symptoms of

disease were poor predictors of whether work disability would occur. Early intervention and strength of occupational bond emerge as important factors in the process of managing disability (Bruyere & Shrey, 1991; Lacerte & Wright, 1992); particularly as it is now recognized that it is more costly and difficult to place workers after disability into new employment than it is to return workers to the pre-injury employer (Habeck et al., 1991; Schwartz, Watson, Galvin & Lipoff, 1989). The interdependence of employer and employee interactions and organizational structures for successful management of disability is also well documented throughout the literature (Friesen, Yassi, & Cooper, 2001; Habeck & Shrey, 1991). Also, facilitating successful disability management is the recognition that worker and workplace co-exist in a reciprocal relationship that is influenced by both the characteristics of the worker and the workplace (Kenny, 1995).

Moreover, the workplace is the context of service delivery for disability management (Shrey & Olshesky, 1992). The workplace supports DM activity as a coordinated process characterized by individualizing solutions to each worker and working situation, regardless of the cause of injury or illness. DM brought to the fore the importance of the employer's role in early intervention, in preventing work loss and in maintaining the worker's connectedness to the workplace. Thus, disability management strategies alleviate the human cost of disability. The extent to which DM has permeated the workplace, however, would not be realized if DM did not address a business need of the employer; namely containment of disability related costs. Salkever, Shinogle, & Purushotamam (2000) demonstrate that the calculation of expected financial costs and benefits plays an important role in employers' decisions to implement DM programmes (see also Habeck et al., 1991). DM enables the employer to exert control over the cost of individual disability outcomes and also, to assume

responsibility for the return-to-work planning and co-ordination of its injured workers. The significance and importance of disability management in addressing the mutual needs of employers and employees can only be understood when compared to the size of the problem. Canadian employers paid an estimated annual $11.3 billion in absence-related costs, annual health benefit payments of $12.5 billion and total lost time WCB costs of $5.7 billion for 2001 (Scott & Curtis, 2003). In British Columbian figures this represents workers' compensation costs of $930,289,332 or lost days from work in the amount of 3,004,318 during 2002 due to occupational disease or injury (WCB of B.C., 2004). Absence costs alone are estimated at over 4.2% of Canadian payroll (Thompson, 2001) which may be an underestimation when compared to the figures from the United States which suggest costs run in the range of 8 – 15% of payroll (Salkever et al., 2000). The most forceful statistic, however, is that reported by Mobley, Linz, Shukla, Breslin & Deng (2000) whereby 70% of employers surveyed in the United States identified workers' compensation costs as a threat to the company's profitability.

Factors Influencing Disability Management

Empirical research supports that occupational disability and return-to-work potential following an injury or illness is a process influenced by a variety of organizational and individual factors (Amick, Habeck, Hunt, Fossel, Chapin, Keller et al., 2000; Freisen et al., 2001; Habeck et al., 1991; Habeck, Scully, VanTol & Hunt, 1998; Westmorland & Williams, 2002). Regardless of the worker's physical recovery process, an effective return to work is jeopardized without a facilitative and receptive work environment (Habeck, Hunt, et al., 1998). Galvin and Schwartz (1986) similarly cite the literature on the advantage of employer based disability management for early identification and timeliness of rehabilitation

intervention. The consensus of opinion is that neglected disability is compounded when delays in rehabilitation occur. Davis (1983) for example, indicates that the biggest single factor affecting the outcome of any case is the timeliness of rehabilitation intervention. This is particularly important when it has been found that the longer individuals are absent from the workplace, the less likely they are to return (Aronoff & Feldman, 2000; Cunningham & James, 2000). Akabas, Fine, & Yasser (1982) report that one-third of workers disabled each year do not return to work. Moreover, they sever their connections to the workplace and are accordingly, disadvantaged if they attempt to re-enter the labour market. Burkhauser, Butler, & Kim (1995) reported that the risk of exiting the workforce due to a work limiting health condition is highest during the first two years following onset. After two years less than 50% of employees with work impairments continue in the job; after six years only 25% remain with the firm. The literature, however, does not infer that the implementation of disability management programmes in and of itself is the recipe for success. As Burkhauser et al. (1995) illustrate job accommodation is a critical variable for increasing the retention rate for those with disabilities. Despite the increase, the overall expected job duration of workers with health impairments remains less than that of the average worker.

What is also important to improving retention rates is for the employer to develop an infrastructure that creates opportunities for temporary accommodations and alternative, productive work options while the injured worker is completing the physical recovery process (Freisen et al., 2001; Mobley et al., 2000). Co-ordinated policies and programmes are necessary but not sufficient to ensure successful outcomes for disabled workers. The intent of this study was to demonstrate that disability management policy is the mediating factor between positive employer attitudes towards disability management and favourable

outcomes for the worker with disability. The current research will focus on internal company factors cited in the literature as under organizational control and pertinent to the successful implementation of disability management programmes. Employer attitudes towards disability will be examined first. A review of the accepted policy and procedural norms for implementing disability management programmes will follow and finally, individual demographic factors relevant to the survey instrument will be reviewed.

Organizational attitudes. The literature cites the difficulty and barriers experienced by workers limited by disability entering or returning to the labour market. The consequence of disability is continued low employment participation rates of this population when compared to working age adults without disabilities (Akabas, 1994; Bruyere, Erickson, & VanLooy, 2004; Gilbride, 2000; Hernandez, 2000; Petty & Fussell, 1997; Shrey & Bangs, 1991). As a result of legislative initiatives such as the ADA (1990) in the United States research finds that employers are expressing more positive global attitudes towards workers with disabilities, thereby, affording job opportunity to people with disabilities (Unger, 1999). Hernandez (2000) argues that this may be a veneer of political correctness as the improved attitudes towards disability issues do not match the real hiring practices of individuals with disabilities. The benefit of disability management however, is the goal of job retention for the disabled worker. The success of disability management would suggest that employers are more predisposed to continue the employment of their own workers with whom they have established a work history. The barrier to continued employment may be somewhat diminished for these workers as companies recognize the need, not only to comply with regulations but also to maintain the employability of a workforce that demographically, is both aging and dwindling (Akabas & Gates, 1990; Bruyere & Shrey, 1991; Tate, Habeck &

Galvin, 1986). The extent of the challenges posed by the demographic changes in the population is discussed by McDonald and Harder (2003). The significance of the discussion is its emphasis on the demographic changes projected for the Canadian population and the subsequent impact on the workforce. The importance of the DM perspective in preventing disability and mitigating its effects when it does occur is particularly relevant when viewed in the context of population changes. Projections indicate that the proportion of workers aged 25-34 will steadily decrease as birthrate decreases while the proportion of workers in the 45-64 age groups will rapidly increase. The projections estimate that workers aged 45-64 will account for approximately 70% of the net increase in the working population by the year 2010. The future direction of these projections suggests that it is economically more viable for employers to mitigate the effects of disability and maintain the employability of its workforce if they are to remain competitive.

Successful disability management in the workplace also has a cultural context (Amick et al., 2000). The organization's role is to provide a positive corporate culture of acceptance for the re-integration of the worker with disabilities into a meaningful occupation. Corporate culture embodies a set of beliefs and values collectively held and socialized by the organization. A definitive explanation of the complexities that delineate organizational climate or corporate culture, however, is rather elusive. For the purpose of this research Schein's (1992) definition will be followed which suggests that corporate culture is the pattern of basic assumptions in the organization that develop from the process of resolving internal and external problems and that these assumptions have worked well enough to be considered valid. Schein suggests that culture provides structural stability to the group on the basis of accumulated shared learning covering behavioural, emotional and cognitive elements

that form into the pattern of norms, values and behaviours that is called culture. This definition suggests that for consistency, these patterns of assumptions are shared across all units of the organization.

Furthermore, corporate culture may act as a driving force in shaping acceptance of the disability management concept or inadvertently act as a restraining force rejecting the concept. Shoemaker, Robin & Robin (1992) found a significant association between corporate cultural factors such as employee value, corporate flexibility, corporate endorsement of the principle of retaining and retraining personnel, corporate social responsibility and the degree of acceptance of early return to work programmes. Visible corporate commitment from top management is cited as a primary internal factor contributing to the successful development of disability management programmes (Pati, 1985; Shrey & Olsheski, 1992; Tate, Habeck & Galvin, 1986). Accordingly, in this research, each company is asked to indicate the degree to which they believe top management, line supervisors and union support the concept of disability management (questions 11, 12, and 13) and the extent to which they commit resources (questions 4 and 6).

The economics of disability is cited as the predominant motivator for the emergence of disability management programmes. Success is frequently measured in economic terms of cost containment and benefit-cost ratios (Pati, 1985). While this is an important employer incentive, the dividends of disability management extend beyond cost ratios. Schwartz et al. (1989) in reporting on company rationale for instituting disability management noted that 77% of employers surveyed by the Human Resources Center cited concern over employee welfare; 54% cited increased use of benefits; 52% cited insurance premium increases and 39% were concerned over the decrease in worker productivity. The hospitality industry, for

example, became committed to disability management as it resolved their very high turn-over rates. Turn over rates, reportedly decreased by 30 to 50 percent following the implementation of DM strategies (Pati, 1985). As a consequence of implementing DM strategies, the Polaroid Corporation reported an increase in productivity from workers with job performance issues when referred to counseling (Galvin, 1986). Prestigious corporations such as Xerox, Kodak, MacMillan Bloedel, Chrysler Canada, British Columbia Hydro to name but a few, reported decreased rates of absenteeism and improved Workers' Compensation experience ratings (Dyck, 2003; Shrey, 1998; Silversides, 1998) as a dividend to implementing disability management strategies. Dividends are also reported in terms of positive morale and commitment among employees who succeed in maintaining their employment (Galvin, 1986). This, however, remains a contentious issue and the findings are too inconsistent to support a positive relationship between employee commitment to the employer and variables such as absenteeism, turnover and job performance (Wright & Bonett, 2002). For individuals with disability their relationship to the employer may be more complex and commitment may be moderated by the fact that they have received accommodations and therefore view their employability to other organizations as compromised. Foremost, disability management programmes are seen as tangible evidence of the company's regard for its employees and compliments a people-oriented culture that values the contribution of the employee (Beaudway, 1986).

Although positive testimonials of cost containment and mutual employer and employee benefits from disability management policies abound, not all employers are aware of the real cost of absenteeism (Mitchell, 2002). These include direct cost of premiums, benefit payments as well as the indirect cost of lost productivity and worker retraining

associated with disability. Employers who overlook the cost of absenteeism have less incentive to adopt the concept of disability management within their workplace (National Institute of Disability Management and Research, 2003). Moreover, not all corporate cultures are receptive to disability management initiatives. Shoemaker (1989) investigated factors of resistance to early return-to-work polices within corporations. Corporations that held beliefs commonly referred to as the insurance myth, the dependability myth, the productivity myth and the accommodation myth were resistant to early return-to-work initiatives (Shoemaker, 1989). Nothwithstanding the empirical evidence to refute such factors, the insurance myth refers to a belief that retaining or hiring workers with disabilities will result in increased insurance and workers' compensation costs and accident liabilities (see Krause, Dasinger, & Neuhauser, 1998). Contrary to the myth, Mobley et al. (2000) showed evidence of a 75% decrease in workers' compensation leave rate when a disability management programme was instituted at an automotive manufacturing plant (also see Schwartz, G., 1984). The dependability myth intimates that workers with disabilities are not dependable despite research to the contrary (see Mobley et al., 2000; Pati, 1985). The productivity myth alludes to quality and quantity reductions contrary to findings. Tate et al. (1986), for example, report increased productivity and improved absenteeism rates from General Motors rehabilitation efforts (see also Cohen, Parrinello, & Kelliher, 1990; O'Brien, 2003). The accommodation myth envisions huge expense for workplace modifications which is the converse to employer reports (see Guinter, Eagels, Harringer & Trusewych, 1995; Nickel & Yangouyian, 1996; Votel, 1993). Unger (1999) discusses formal and informal accommodations the majority of which are unobtrusive, inexpensive, or draw on existing employer resources. Additionally, there are employer reports that some

accommodations were useful and effective in addressing employment-related issues among individuals with no known disability but made general good sense for all employees. The survey instrument used in this research will explore the degree to which employers continue to subscribe to these various attitudes to measure companies overall perceptions of DM. Statements are presented to measure the degree to which each employer agrees or disagrees with the insurance myth (question 8); the dependability myth and turnover (question 10 and 14); the productivity myth (question 7); the accommodation myth (questions 3 and 9); the therapeutic value of work (question 2); and re-integrating employees with restrictions (question 5).

Organization policies and procedures. As previously mentioned, positive cultural context is not sufficient in itself for the successful implementation of disability management programmes. This attitude must translate into cohesive policies and well managed services. Guidelines presented by several authors (e.g. Akabas & Gates, 1990; Schwartz et al., 1989; Shrey, 1996; Tate, Habeck & Schwartz, 1986) exemplify a multidisciplinary team approach for the implementation of disability management. The following is a summary of the primary strategies identified that facilitate employee placement in jobs and improve labour support for DM practices:

1. More explicit language included in union contracts that describes the various steps for implementing work return transitions for disabled workers.
2. Educational efforts implemented to promote awareness among coworkers, with respect to the nature and needs of disabled or injured workers.
3. Establishing a committee of first-line supervisors, union representatives and placement coordinators to generate creative strategies designed to place restricted workers.
4. Development of a job analysis bank so that workers could be selectively placed in jobs in which the demands were congruent with their physical capacities and work restrictions.

5. Labour-management supported work-site accommodations so that on-site disability management programmes could be effective in promoting work return and worker retention.

Research underscores the importance of coordinated policies that affirm and support return-to-work commitment (Westmorland & Williams, 2002). Bruyere & Shrey (1991) state that policies and procedures jointly promulgated by labour and management are critical to reducing adverse reaction to the implementation and success of disability management programmes. Jarvikoski & Lahelma (1980, 1981) concluded that success of employer based disability management programmes ultimately depend on the joint commitment, support and active participation of labour and management. Approval of the general principles of early intervention by the employer, the different levels of the line organization as well as the employees and their labour unions is a prerequisite condition (see also Pransky, Shaw, & McLellan, 2001; Shaw, Robertson, Pransky, & McLellan, 2003).

Mitchell (2002) further supports the necessity for a clear statement of expected cooperation with the return-to-work process from all employees. Additionally, return-to-work language should be an integral part of the blueprint for an effective programme whether or not the establishment is unionized. For unions, however, the acceptance of and co-operation with disability management programmes may be considered a shift in their traditional direction. Historically, unions have a collective focus and advance the protection of the collective group. Restrictive language clauses included in collective bargaining agreements such as job classifications, seniority rights, and transfer rights present as obstacles to the return-to-work process (Baril & Berthelette, 2000).

Stock, Deguire, Baril, & Durand (1999) cite seniority as one of the most difficult problems to resolve when facilitating modified work for injured workers, particularly when

higher seniority gives priority access to less physically demanding jobs. Bruyere & Shrey (1991) cite that poor labour relations translate into lengthy disability claim duration. Cohen, Parrinello & Kelliher (1990) report initial union resistance to the introduction of disability management strategies at Long Island Railroad. Described as near sabotage, resistance continued until collective bargaining agreements were renegotiated and the disability management programme was revamped through collaborative agreement. Consequently in view of past findings, questions 2 and 3 of the survey instrument for this research will measure how well current companies adhere to the 'best practice' guidelines and include language within the employment contract or bargaining agreement delineating disability management and early return to work policies.

Clear policy, explicit language, flexibility and open communication between the interested parties are cited as the basic elements of successful practice (Westmorland & Williams, 2002). The effectiveness of these basic elements is realized through the Akabas & Gates (1990) findings. These authors found that most disabled workers wanted to return to work before they were able to perform full duties but up to 80% reported they perceived their employers were inflexible regarding accommodations despite case managers being available to assist with early return-to-work planning. In the instances studied, policies were not broadly communicated to employees and procedures were not clearly identified making for lost opportunity for both disabled workers and employers. Similarly, Krause et al. (1998) report that of over 4,000 disability insurance beneficiaries only 20% had any knowledge that they were eligible for a work trial programme, and that those who were aware of the programme were twice as likely to return to work. Friesen et al. (2001) further corroborated the importance of effective communication in their study into stakeholder perspectives on

barriers and facilitators for return-to-work. Investigating the interplay between the worker and the workplace structure within the regulatory insurance context, delays in the process or delivery of information or treatment and ineffective communication were found to be detrimental to the return-to-work process (see also Mobley et al., 2000). Primary among their findings was the need for rapid and effective communication among all stakeholders which includes compensation provider and physician, not only employer and employee. The summation of their findings, similar to the contention of this thesis, is that successful return-to-work is not the result of positive relationships between parties nor formal policies alone but an interplay of organizational structures and human interactions. Several aspects of communication are measured in this research; Question 1 tests the importance of educating and informing the employees about return-to-work options; Question 5 explores the level of cooperation between the various parties to review return-to-work polices in joint committee; while Question 8 seeks to capture the level of co-operation within the workplace in reassigning workers with disabilities; and Question 14 garners information regarding regular contact with injured workers to facilitate early re-entry to the workplace.

Many worksites continue to prohibit the injured worker's early return to work through restrictive policies of not returning to work until they are 100% fit for duty (Aronoff & Feldman, 2000; Shrey & Olsheski, 1992). This presents as an impractical barrier for individuals who would benefit from transitional work options to condition themselves back into their regular job. It may also be exclusionary for individuals with residual limitations following maximum medical recovery that need accommodation to enable them to perform their duties. It is also inequitable to insist upon 100% productive capacity for recovering workers while many of their co-workers without disabilities continue working at less then

100% efficiency. This negates the therapeutic value of the workplace (Durand & Loisel, 2001; Iserhagen, 2000; Aronoff & Feldman, 2000). This research examines the degree to which employers require full recovery before permitting a return to work (question 6).

The empirical research advocates a systematic approach to worksite accommodations. The findings demonstrate that the more effective strategies have moved beyond the designation of light-duty jobs and developed more flexible, individualized responses to return-to-work accommodation needs that are transitional in nature (Habeck et al., 1998). Further supporting these findings, Iserhagen (2000) proposed that the focus of a successful integrated disability management system should be the ability to match the worker and the work. Problems typically encountered with traditional light duties pertain to the compatibility of generic tasks to the worker's specific functional capacity; the unlimited timeframes placed on these assignments, sometimes resulting in permanent placement; and labour relation conflict particularly in unionized environments where light-duty positions are considered an earned reward based on seniority (Shrey, 1998). Transitional work is focused on meaningful work activities allowing for physical reconditioning, re-education on safe work practices, and progressive upgrading of work activities to the acquisition of regular duty in the pre-injury job. Transitional work programmes minimize the loss of job fitness and physical conditioning effects which can be detrimental to the recuperation process. Work return transition options combine the benefit of continuity of work routine and work activity by matching the functional abilities and endurance level of the worker to assigned duties for a temporary, short-term period as the worker progressively transitions back to the original full duty, full shift job (Bruyere & Shrey, 1991). Durand and Loisel (2001) showed the success of linking a work rehabilitation programme to the workplace for individuals with

chronic back pain. Krause et al. (1998) reviewed the literature relevant to worksite based modified work progammes and found the evidence to strongly support the principle of gradual return to work as a means of successful rehabilitation for temporarily and permanently disabled workers.

Primarily, the research demonstrates that employees with access to modified duty return to work after a disabling injury about twice as often as employees without access to any form of modified duty. Modified work programmes reduced the number of lost work days per disabling injury by 50%, supporting that such programmes are effective. There is encouraging evidence to suggest that time lost in back pain claims can be reduced by appropriately modifying duties. Such measures have reportedly realized up to a 51% reduction in claims costs and address one of the main causes of workers' compensation claims and high costs (Frank, Sinclair, Hogg-Johnson, Shannon, Bombardier, Beaton & Cole, 1998). Similarly, Infante-Rivard & Lortie (1996) concluded from their investigation of first compensated episodes of back pain that duration of absence is not limited to the disease and pathological recovery process but is also influenced by social and work factors; namely work history and flexibility of accommodations provided. Anema, Cuelenaere, van der Beek, Knol, de Vet, & van Mechelen (2004) investigated a multinational cohort of 1,631 workers sick-listed for 3-4 months due to low-back pain and concluded that adaptation of workplace, job tasks and working hours was effective in returning long-term sick-listed to work. Failure to implement ergonomically focused workplace accommodations may be a contributing factor to delayed functional recovery and relapse (Loisel, Gosselin, Durand, Lemaire, Poitras, & Abenhaim, 2001; Shaw, Feuerstein, Miller, Lincoln, Berger, & Wood, 2000). Salkever, et al. (2000) report the most common type of accommodations provided by employers is

modified or partial job duties and reduced or flexible work schedules (76.93% and 73.99% respectively). Accordingly, the current research will investigate the type of accommodations most commonly offered to employees. Using a five-point Likert scale employers are asked whether they can match the abilities of the worker to the demands of the job (Question 7); accommodate modified duties (Question 9), modified schedules (Question 10), alternative duties (Question 11), modified work environments (Question 13) and/or ergonomic devices (Question 13)

Worker demographics. Recent research is applying a bio-psycho-social approach to predict individual return to work outcomes as a conceptual model that integrates physical, psychological, and social components of the disability process (Aronoff & Feldman, 2000; Karjalainen, Malmivaara, van Tulder, Roine, Jauhiainen, Hurri & Koes, 2001; Schultz, Crook, Berkowitz, Meloche, Milner, Zuberbier, & Meloche, 2002; Shaw & Polatajko, 2002). Such a model is practical for multi-method research that elicits the interrelationship between the person, the environment and the occupation on the return-to-work process. This current research, utilizing a single method approach, is concentrated on employers and investigates their attitudes and policies towards workers sustaining compensable injuries. The study parameters, therefore, focus only on worker demographic factors that are available through the employer personnel records. The following review discusses demographic factors based on empirical findings that influence return-to-work outcomes. Typically, research indicates that size of company, age, gender, tenure, union presence, educational level, pre-injury pay-rate, nature and location of injury are relevant to return-to-work outcomes. Principally, return-to-work policies are associated with financially healthy, larger companies (Baril, Berthelette & Massicotte, 2003; Hester & Decelles, 1990).

The study conducted by Baril & Berthelette (2000) further reveals that access to and provision of early return to work measures among claimants of Quebec's Workers' Compensation Board (CSST) was dependent on the worker's age, gender, occupation, and type of injury. Similarly, Blackwell, Leierer, Haupt, & Kampitsis (2003) found the most significant individual predictors for returning to work were education, age, mandated rehabilitation, time of injury to referral for rehabilitation, and lawyer involvement. Likewise, Butler, Johnson, & Baldwin (1995) observed from a cohort of Ontario workers with permanent partial impairments that age, education and gender are characteristics that influence return to work outcomes. Shaw & Polatajko (2002) cite age, severity of illness, and gender as the three most frequently studied individual factors with age cited as the strongest but not singular predictor of work outcomes.

Baril & Berthelette (2000) also found that among CSST claimants return-to-work provisions were statistically more likely to be applied towards female workers aged between 30-39 years in the health and social service sector. The differential application of return to work measures was based on the belief by CSST and workplace representatives that older workers take longer to recover and were more likely to be laid off; younger workers had quicker recovery times but their limited work experience hindered the facilitation of reassigned duties. An association between site and type of injury was also identified in this study. Early return-to-work measures were statistically more likely to be applied in cases of inflammation to upper limbs and shoulders. The explanation provided suggests that CSST and the larger employers of the health and social service sector had greater ability to accommodate this type of injury which was also associated with short duration of absences. Butler et al. (1995) reviewed the three most frequent work-related injuries of back

sprains/strains, other sprains/strains, and fractures. The authors report the probability of keeping ones original job is greater for workers suffering other sprains/strains. Gender differences noted in the results are considered a reflection of the different physical demands of typical male and female jobs. Female workers were most at risk for unstable employment patterns following an injury. The probability of not returning to work increases for every year of age among older workers and among women workers. Women were more likely to experience multiple spells of absence and unsuccessful returns to work (see also Crook, Milner, Schultz, & Stringer, 2002). Salkever, Shinogle, Purushothaman (2001) analyzed long-term disability (LTD) rates and report the incidence rate to be 1.7 times greater for female workers than male workers. In contrast, the statistics reported by the WCB indicate that for the 41,275 male workers injured during 2003, the corresponding female rate of injury was 17,560, approximately 23% of total injuries (WCB, 2004). Baril et al. (2003) similarly found that females sustained lower rates of work injuries (35.4%) than males.

Higher educated and more experienced workers were better able to compensate for their limitations by modifying the job demands and work schedules than were less experienced, less educated workers (see also Johnson & Ondrich, 1990). Schechter (1999) found a clear association between educational attainment and return to work. A work history of short-term jobs and a brief period on the job prior to injury reduced the probability of returning to work (Aronoff & Feldman, 2000). Length of tenure is also associated with incidence rate of reported accidents. Habeck, Hunt et al. (1998) noted that less than one year's tenure was significantly associated with higher accident rates. In the same study, the presence of unions was also found to be associated with a 17% higher accident rate. Similar findings are reported by Hirsch, MacPherson & Dumond (1997) citing the availability of

claim processing information as the primary reason. Butler, Baldwin, & Johnson (2001) indicate that union presence assists in the return to work process, mainly by securing the pre-injury position for the worker but that union membership has little effect on promoting stable employment following the return to work. Johnson & Ondrich (1990) cite union presence as a factor influencing duration of work absence, particularly within unions that have retained a lawyer, and when absence from the workplace is considered a strategic maneuver. These authors also found that the higher the pre-injury wage the shorter the absence from work (see also Baldwin, et al., 1995; Butler, et al., 2001; Habeck, Hunt et al., 1998). Overall, the research suggests that demographic factors are valuable predictors of return to work when considered in reference to workplace attitudes, practices and job demands. The current research will obtain demographic information relating to age, gender, tenure, union, education, pay rate, nature and location of injury to examine the relationship between these factors and employee outcomes measured as return to regular duty, post-injury pay, relapse, accommodation and continued tenure. The original intent of this study was to use structural equation modeling to test the hypothesis that outcomes for the employee are positive when company attitudes towards disability are mediated by disability management practices. Due to the inadequacy of the data modeling could not be conducted, however, the revised objectives use regression analysis to examine the predictive value of company DM perceptions and company DM policies on return to work outcomes for the injured worker.

Conclusion

Recently, the research focus has turned to the question of durability. Researchers are examining how durable the benefits are from disability management strategies in terms of the long-term employment retention rate of the injured worker. The success of disability

management programmes has consistently been measured in terms of cost containment for the employer and reduction in claim duration for the employee. As reviewed by Krause et al. (1998) modified work and return to work literature concludes (a) that injured workers who are offered modified work return to work about twice as often as those who are not; and (b) that modified work programmes cut the number of lost work days in half. It is accepted throughout the literature that there is a window of opportunity where return to work is an attainable outcome in the early stages of disability claims and that the probability of returning to work decreases the longer the duration of claim. Frymoyer & Nachemson (1991) found that duration of absence has a substantial influence on return to work outcomes. From their literature review, they determined that low back incidences have a return to work rate of 89% within 3 months, a 40% return to work rate after six months absence, a 20% return to work rate after one year and a return to work rate approaching zero after two years of absence.

The Zabrodski (1998) literature review found that there was a workers' compensation/ disability cost containment bias in assessing outcomes and less research assessing the employee's long-term outcome after returning to work. Zabrodski suggests that an early return to work by itself does not guarantee a favourable long-term outcome for the worker. Cater & Smith (1999) suggests the initial return-to-work may be an insufficient measure of the successful re-integration of the disabled worker. Research conducted by Butler et al. (1995, 2001), Johnson et al. (1995) and Baldwin et al. (1996) suggest that workers returning from WCB claims to their pre-injury employer have a higher rate of termination and lower rate of stable employment than non-injured workers over the course of time. Butler et al. (1995) demonstrated that measuring the first return to work is an over estimation of the successful re-integration of WCB claimants in a population of workers sustaining permanent partial

impairment. Their analyses, based on data from the *Ontario Survey of Workers with Permanent Impairments*, infers that 85% of injured workers return to work, however, when evaluated over a period of years the rate dropped to 50% of workers able to maintain employment. Identifying post-injury patterns revealed four specific patterns; (a) single absence, successful return, (b) single absence, unsuccessful return, (c) multiple absences, successful return, and (d) multiple absences, unsuccessful return. The authors deduced from their study that better educated employees incurred greater financial investment from firms which in turn provided the incentive to accommodate the injured employee. The accommodations provided resulted in higher retention rates for these employees. Less likely to return to work were older, non-union workers with less education. Union membership had the advantage of protecting pre-injury job and initial return to work outcome but showed less success with maintaining employment status over time. No specific analysis was undertaken to illicit the impact of disability management intervention on the patterns identified.

The Butler et al. (2001) analysis was based on a survey population of Ontario workers examined for permanent partial disability by WCB physicians between June 1989 and June 1990. The Canadian experience with disability management was still in its infancy during that timeframe. A 1997 Watson Wyatt report found that 39% of Canadian employers surveyed supported some form of coordinated disability management for employees (Steeves & Smithies, 1998). Harder & Voaklander (2003) found the support for disability management to have improved with 82% of responding employers reporting that they offered some form of DM services, however, only 11% of these employers had dedicated staff coordinating 'in house' services. The Butler findings, therefore, indicating that only 35% of

injured workers sustained their employment after first return to work may not represent the current employment retention rates of injured workers.

With Canadian employers becoming more proactive in managing disability, the underlying assumption of the current research is that workplace accommodations mitigate disability associated with impairments. Adapting the required job demands to accommodate the functional abilities of an injured employee mitigates the impact of a disability. Mitigating the impact of disability facilitates continued employment for that employee. To test the assumption this research measured company perceptions, policies and employment status of WCB claimants five years after claim closure. To this end, the information available from the literature was used to devise a questionnaire to measure company policies, perceptions and return-to-work outcomes. The true outcome of interest was the mediation value of the perception and policy variables in predicting positive return-to-work outcomes for the injured worker in terms of length of retention, resumption of regular duties, maintenance of earnings, access to accommodation and lack of relapse. The available data, however, did not permit the creation of a path diagram to investigate the hypothesis that the best fit model for predicting outcomes for injured workers is mediated by positive company policies within workplaces that have positive perceptions of disability management.

Consequently, the revised measures evaluated the predictive value of DM perceptions and policies. A summary of the literature cited thus far, suggests an effective DM programme relies on a work culture that combines the philosophical and operational principles of DM (Habeck et al., 1998; Unger, 1999). The philosophical principle promotes a work culture that expresses positive attitudes towards individuals with disabilities and the operational principle promotes the policies that support individuals with disabilities in the

workplace. Rather than the more frequently used outcome of cost-containment, the outcome criterion measured was Return-to-work linking this study more directly to the objectives of DM as cited by Tate et al. (1986). Based on the literature, therefore, Objective (a), examined the predictive value of DM perceptions (philosophical principle) and DM policies (operational principle) in return-to-work outcomes for the injured worker. Dividing the objective into steps as presented in Figure 1, the expectation for Objective (a) was that DM perceptions make a significant contribution to the presence of DM policies in the workplace (Tate et al., 1986); that DM policies make a significant contribution to return-to-work outcomes for the injured worker (Tate et al., 1986); but that DM perception without the support of policy is not a significant contributing factor to outcomes (Tate et al., 1986).

The second objective, Objective (b), examined factors that influence DM perceptions, DM policies, and Return-to-work outcomes. Employer characteristics that are empirically supported (Habeck, Hunt et al., 1998) to influence return-to-work outcomes for injured workers were used to achieve this objective. The hypothesis was that there are differences in employer characteristics of Industry type, Unionization, Hourly paid workers, and Company size that are influential factors in DM perceptions, DM policies and return-to-work outcomes for the injured worker.

In an exploratory vein, the third objective of this study, Objective (c), was to examine the relationship between outcomes for the injured worker and various factors such as age, gender, years of service, union membership, educational level, pre-injury pay rate, nature of injury and location of injury. The research supports that the variables selected are factors known to influence return-to-work outcomes for the injured worker (refer to section *Worker Demographics*, p20). The hypothesis expected that differences in age, higher educational

level, and higher pre-injury pay rate would be related to outcomes for the injured worker. No a priori expectations, however, were made for gender, union membership, nature or location of injury.

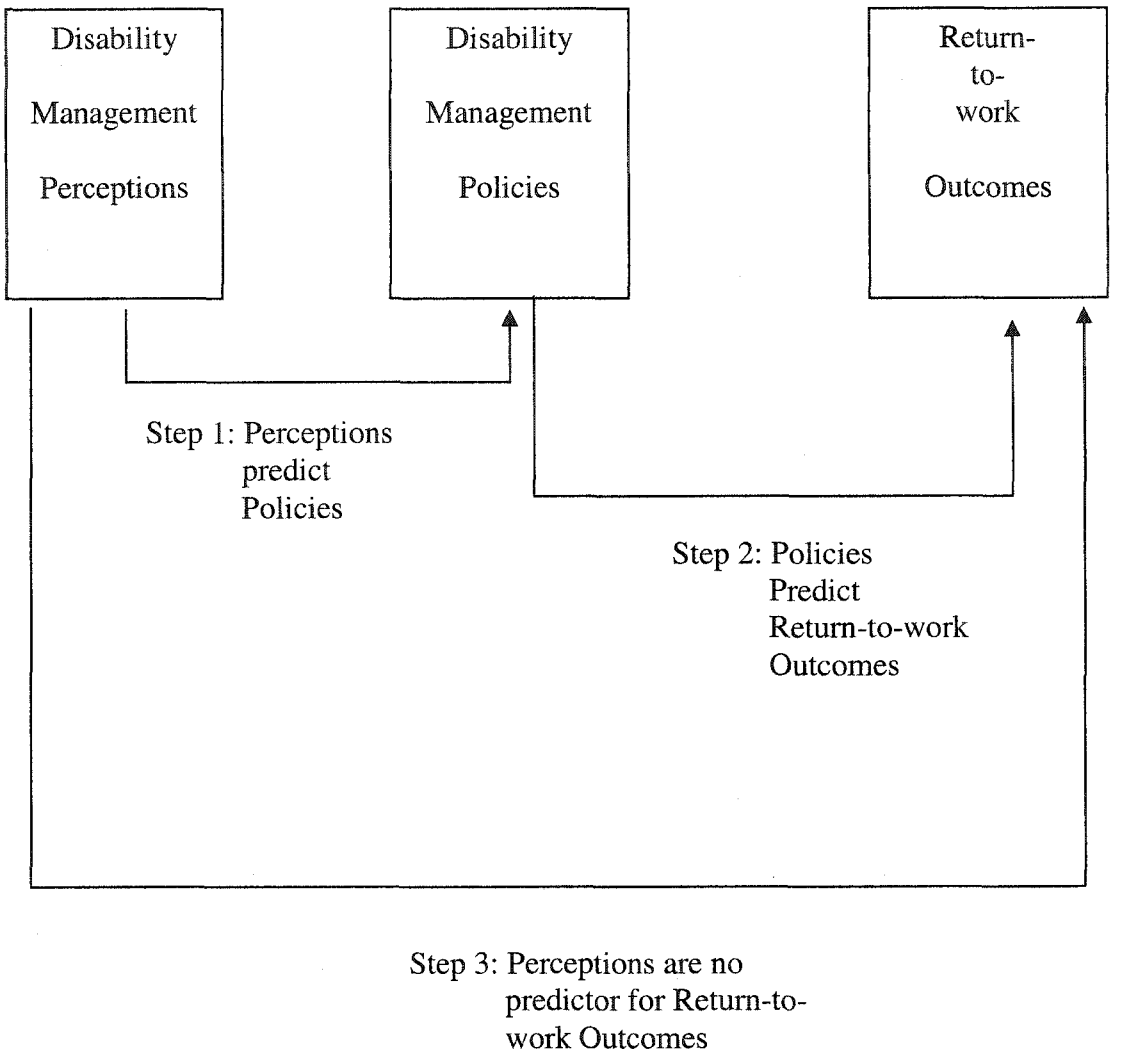

Figure 1. Diagram representing the three steps to achieve Objective (a).

Method

Participants

The participants were employers from a Northern B.C. community. From a listing of all companies (total 186,000) covered under the jurisdiction of the Workers' Compensation Board of British Columbia (WCB), a localized sampling frame was extracted using postal codes (V2J through to V2N) to identify companies in Prince George and surrounding area. This sampling frame of 5,736 companies was further reduced using payroll information provided from the WCB listing. The criterion of payroll over $100,000 yielded a total sampling frame of 1,559 companies. To control for inherent differences between smaller and larger companies, the sampling frame was ranked by payroll and stratified into four groups: Group 1 with payroll under $200,000 (total 676 companies); Group 2 with payroll between $200,000 and $599,000 (total 598 companies); Group 3 with payroll between $600,000 and $999,000 (total 125 companies); and Group 4 with payroll over 1 million dollars (total 160 companies). To have an even representation of company size, random selection of 25 companies was conducted separately for each of the four groups using the point entry method (point of entry 70). Each 30th company was selected to a total of 100 companies.

Design

This is a retrospective study using employers' Workers' Compensation Board of British Columbia claims information. The data for the study was collected using a self-administered questionnaire. The questionnaire gathered information on company demographics, company disability management policies, company perceptions of disability management as well as employee demographic and return-to-work information.

Procedures

Ethics approval from the University of Northern British Columbia and employers' informed consent was obtained prior to the commencement of data collection. Telephone contact was made with the 100 randomly selected companies to identify the most appropriate official responsible for personnel within each organization. The questionnaire was faxed to each official. Follow-up telephone contact was made with each recipient to secure their participation in the survey. From the initial contact, 42 replacements were required for companies that indicated they were unable to participate. Replacement selection followed the same procedure as the initial selection. Questionnaires were faxed to these most appropriate officials identified by telephone contact. A further 21 replacements were selected as a consequence of refusals to participate. Telephone contacts alone (maximum 4) secured a response from 37 companies, 29 companies required on-site visits and 6 questionnaires were completed by telephone interview providing a total of 72 participants. The research sample size was estimated using multiple regression analyses and three predictors (company size, company policies, company attitudes) requiring a total of 76 participants when power $=.80, \alpha = .05$ and medium effect size, i.e. $f^2 = .15$ (Cohen, 1992). The 72 respondents comprised the sample population.

Companies were asked to complete a questionnaire that consisted of a company demographic section, a DM policy section, a section covering the company's perception towards disability management and a section advising of return-to-work outcomes for selected injured employees. Companies were also required to identify and provide information on one injured employee who met the following criteria:

(a) Minimum of 6 weeks paid disability compensation by WCB.

(b) Claim closure in 1999.

(c) Claim closed for reasons of return-to-work.

Employers were advised that they may use the WCB Claim History Report, personnel record computer system, or benefits computer system to identify the employee.

The 14 item section of DM policies was designed to capture the company's behaviour relating to disability management. Each item was a statement about policy and procedures currently enforced within the organization. The participant was required to indicate their level of agreement with each statement presented, for example, item 1 of the DM policy sections stated "We regularly educate and inform all employees about our early return to work options." All items were scored on a 5 point Likert scale (1=disagree, 2= somewhat disagree, 3= neutral, 4= somewhat agree, 5= agree). The sum of the scores was defined as DM policy with higher scores indicating positive policies and lower scores indicating less positive policies regarding disability management.

The 14 item section of DM perceptions was designed to capture the company's opinion towards disability management. Items were similarly presented as statements that measured opinions on matters relating to the accommodation of workers with restrictions, e.g. item 2, DM perceptions stated "An employee returning to work with workplace restrictions hinders the recovery process of that worker." Likewise, belief in the benefit of disability management was measured e.g. item 9, DM perceptions stated "It costs less to accommodate returning employees who need workplace accommodations than to train new employees." All items were scored on a 5 point Likert scale (1=disagree, 2= somewhat disagree, 3= neutral, 4= somewhat agree, 5= agree). The sum of the scores was defined as

DM perceptions with higher scores indicating positive perceptions and lower scores indicating less positive perceptions of disability management.

The section, Injured Worker Return-to-work Information comprised 5 statements to capture the status of injured employees in terms of resumption of duties, income, relapse, accommodation, and retention. All items were scored on a 5 point Likert scale (1=disagree, 2= somewhat disagree, 3= neutral, 4= somewhat agree, 5= agree). The sum of the scores was defined as Return-to-work outcomes with higher scores indicating positive outcomes and lower scores indicating less positive outcomes. The order of the questionnaire was counterbalanced to control for response bias (Ray, W.J., 1997). The cover letter and sample questions from the questionnaire are presented in Appendices A and B.

The overall response rate to the questionnaire was 44%. The sample consists of 15 companies from Group 1 representing companies with payroll under $200,000 and a response rate of 60%; 18 companies from Group 2 representing companies with payroll between $200,000 and $599,000 and a response rate of 72%; 18 companies from Group 3 representing companies with payroll between $600,000 and $999,000 and a response rate of 72%; and 21 companies from Group 4 representing companies with payroll over 1 million dollars and a response rate of 84%. Of the 72 responses received only 21 (29%) reported claims data.

Measures

All statistical analyses were conducted using SPSS for Windows, version 12.0. All data entry items, reverse scoring and coding were double-checked for accuracy. Factor analyses were conducted to ensure the variables used for the constructs of company disability management policy and company perceptions towards disability management were

appropriate measures. As the dimensions identified are inter-related components of DM perception and DM policy, the sum of response scores was measured from their respective sections in the survey.

Objective (a) – to examine the predictive value of DM perceptions and DM policies in return-to-work outcomes for the injured worker. For this objective, H_1 stated that DM perceptions contribute to the presence of DM policies. H_2 stated that DM policies contribute to return-to-work outcomes for the injured worker. H_3 stated that DM perception is not a direct influence on return-to-work outcomes for the injured worker. To test these hypotheses three regression analyses were conducted. In the first regression, DM perception was tested using DM policy as the criterion variable. The second regression tested the predictive value of DM policy using Return-to-work outcomes as the criterion variable. To evaluate the criterion variable of Return-to-work outcomes, measured as the sum of responses to Injured Worker Return-to-work Information sheet, logarithmic score transformation (Tabachnick & Fidell, 2001) was required due to the substantial negative skewness (-.661). The third regression tested the predictive value of DM perceptions for the criterion variable, Return-to-work outcomes.

Objective (b) – to examine factors that influence DM perceptions, DM policies, and return-to-work outcomes. The overall hypothesis, H_1, for this objective stated that there is a difference between employer characteristics of (a) industry type, (b) unionization, (c) hourly paid workers, and (d) company size that are more likely to contribute to (1) positive perceptions of DM, (2) the presence of DM policies in the workplace, and (3) outcomes for the injured worker. To test this hypothesis the independent variables were Industry type, Unionization, and Hourly-paid workers and Company size. Pearson's correlation revealed

that the three dependent variables of DM perception, DM policies and Return to work Outcomes were related (r = .58 between Perception and Policy; r = .38 between Policy and Return-to-work; and r = .24 between Perception and Return-to-work), therefore, multivariate analysis of variance (MANOVA) was conducted. As this is a preliminary study, follow-up analyses of variances (ANOVAs) were conducted to assess whether there were differences among the factors for certain of the dependent variables. Using the Bonferroni procedure (Green, Salkind, & Akey, 2000) the ANOVAs were tested at the .01 level. Bonferroni Post Hoc Tests were performed if a significant difference was found and if the assumption of homogeneity of variance was met, if not, Dunnett's C was used.

Industry type was categorized into five groups based on the reported company operation. Type 1 consisted of 18 companies involved in manufacture, construction or repair and accounted for 25% of the sample. Type 2 comprised 18 companies involved with retail, hospitality, sales and transportation service (25% of the sample). Type 3 comprised of 14 companies involved in the forestry, lumber, or trucking business and accounted for 19.4% of the sample. There were 11 organizations in Type 4 involved with health care and education (15.3%). Type 5 companies were involved with consulting (15.3%). Unionization was measured as a dichotomous variable with 0 representing no bargaining units and 1 indicating one or more bargaining units within the workplace. The variable, Hourly-paid workers, was grouped into 3 categories based on the percentage of workers paid on an hourly basis. Category 1 represented the companies reporting 40% or less of its workers were paid on an hourly basis (23.6%); Category 2 comprised companies with percentage of hourly paid workers between 41 and 80% (27.7%), and Category 3 comprised companies with percentage

of hourly paid workers between 81 and 100% (48.7%). Company size was a measure of the payroll categories used in the selection of companies for the survey.

Objective (c) – to examine the relationship between demographic factors of the individual and return to work outcomes. The general statement for the exploratory hypothesis, H_1, stated that differences between demographic factors such as (a) age, (b) gender, (c) years of service, (d) union membership, (e) educational level, (f) pre-injury pay rate, (g) nature of injury and (h) location of injury are related to Return-to-work outcomes for the injured worker. Separate ANOVAs were conducted on the component variables. The within-group variable measured was outcomes for injured worker; the between-group variables were age, gender, years of service, union membership, educational level, pre-injury pay rate, nature of injury and location of injury. The source of this data was the questionnaire section titled Demographic Information Regarding Injured Worker. Eight ANOVAs were conducted. Multiple comparison tests were completed if the factors proved to be significant ($p < .01$). Bonferroni Post Hoc Tests were used if assumptions of homogeneity of variance were met, if not, Dunnett's C was used.

Results

Preliminary Analysis

The appropriate items from the DM Policy measure and the DM Perception measure were reverse-scaled. The item means and standard deviations for both measures are presented in Table 1. Histograms of company means are presented in Appendices D and E.

Factor analysis was conducted for the 14 items from the DM Policy measure and the 14 items from the DM Perceptions measure. All variables were screened for outliers and skewness. The distribution of the DM Policy and DM Perception scores displayed a low negative skew (-.3). Subjecting the data to square root transformations (Tabachnick & Fidell, 2001), however, overcompensated the skewness therefore the untransformed data was used in the analysis.

The dimensions of the 14 items from the DM Policy measure were analyzed using maximum likelihood factor analysis. The criteria used to determine the number of factors to rotate were the scree test and the interpretability of the factor solution. Four factors were rotated using a Varimax rotation procedure. Using a cut-point loading rating of 0.3 (Tabachnick & Fidell, 2001) the rotated solution, as shown in Table 2, yielded four interpretable factors labeled: (a) company DM strategy; (b) consensus for DM; (c) company DM practice; and (d) company dissemination of DM.

Company DM strategy accounted for 20.49% of the item variance. This factor comprises items 9, 10, 11, and 12 which focus on accommodation strategies available to employees. Consensus accounted for 12.82% of the item variance. This dimension converges on labour-management agreement and comprises items 2 and 3. The third factor

Table 1

Descriptive Statistics for DM Policy and DM Perception Measures (N=72)

	DM Policy		DM Perception	
	Mean	SD	Mean	SD
Item 1	2.76	1.524	3.96	1.238
Item 2	2.50	1.520	4.08	1.242
Item 3	2.25	1.319	2.76	1.316
Item 4	3.78	1.436	3.94	1.331
Item 5	3.18	1.532	2.26	1.374
Item 6	2.57	1.564	4.29	1.106
Item 7	3.00	1.520	2.94	1.509
Item 8	2.88	1.661	3.49	1.353
Item 9	3.68	1.422	3.65	1.280
Item 10	3.78	1.503	3.58	1.219
Item 11	3.56	1.537	4.10	1.023
Item 12	3.07	1.550	4.06	0.854
Item 13	3.22	1.484	3.26	1.138
Item 14	3.85	1.296	3.40	1.109

accounted for 11.72% of the item variance and encompasses a dimension of DM practice from items 5, 6, 7, and 8. Factor 4, accounting for 9.92% of item variance, comprises items 1, 4, and 14. This dimension converged on items relevant to the dissemination of DM among employees. Item 13 had a low loading across all factors and was excluded from subsequent analysis.

The factor analysis procedure was repeated for the 14 items from the DM Perception measure using the same cut-point loading rating of 0.3 (Tabachnick & Fidell, 2001). The rotated solution yielded three interpretable factors and is presented in Table 3. Based on the content of the three sets of items the factors identified are: (a) workplace accommodation; (b) company commitment; and (c) impact. Workplace accommodation accounted for 26.61% of the item variance. The dimension converged on items 1, 2, 3, 4, 5, 7, 8, and 9 centering on the employer's perception of the injured returning to duty with workplace restrictions. Factor 2, company commitment, converged on items 10 and 14, accounting for 16.28% of the item variance. The impact dimension accounted for 13.78% and comprised items 6, 11, and 12. Item 13 had a low loading across all factors and was excluded from subsequent analysis.

Table 2

Rotated Factor Matrix(a) DM Policies

	Factor			
	1	2	3	4
Policy 1	.206	.427	.267	.712
Policy 2	.051	.754	.167	.285
Policy 3	.129	.885	.096	.142
Policy 4	.150	.273	.096	.468
Policy 5	.190	-.053	.422	.133
Policy 6	.170	.091	.515	-.467
Policy 7	.099	.155	.547	-.050
Policy 8	.144	.178	.767	.202
Policy 9	.860	.265	.167	.071
Policy 10	.662	.039	.311	.060
Policy 11	.901	.152	.236	.101
Policy 12	.721	.069	.105	.130
Policy 13	.301	-.047	.031	.152
Policy 14	.300	.134	-.011	.473

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 6 iterations.

Table 3

Rotated Factor Matrix(a) DM Perceptions

	Factor		
	1	2	3
Perception 1	.726	-.191	.280
Perception 2	.739	-.064	.015
Perception 3	.673	.002	.106
Perception 4	.786	-.022	.229
Perception 5	.626	.050	.177
Perception 6	.085	-.216	.589
Perception 7	.818	.152	-.133
Perception 8	.526	.161	-.137
Perception 9	.423	.283	.158
Perception 10	.072	.741	.116
Perception 11	.100	.472	.774
Perception 12	.114	.429	.824
Perception 13	.098	-.672	.101
Perception 14	.144	.809	.209

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 4 iterations.

Primary Analysis

Objective (a). Structural equation modeling using Amos 4.0 was the procedure initially planned to analyze modeling hypotheses testing the best fit for predicting positive outcomes for the injured worker. It was not feasible to construct the path diagram from the data provided on the injured worker. Of the 72 completed questionnaires, only 21 participants' claims data met the inclusion criteria which were:

(a) Minimum of 6 weeks paid disability compensation by WCB.

(b) Claim closure in 1999.

(c) Claim closed for reasons of return-to-work.

The hypotheses to achieve Objective (a) were, therefore, revised. Three hypotheses statements were used. H_1 stated that DM perceptions predict the presence of DM policies. H_2 stated that DM policies predict return-to-work outcomes for the injured worker. H_3 stated that DM perception is not a direct predictor of return-to-work outcomes for the injured worker. These hypotheses allowed for three separate bivariate linear regression analyses to be conducted. The results of the regression analyses show H_1 was significant ($p<.05$). The scatterplot, as shown in Figure 2, indicates that there is a positive linear relationship between DM perceptions and policies suggesting that as DM perceptions are more positive so too are DM policies. The strength of the relationship (r) was .58 indicating the overall accuracy in predicting the presence of company DM policy from company perception towards DM was high in this study. Approximately 34% of the variance of DM policies was accounted for by its linear relationship with DM perceptions. As hypothesized, positive DM perceptions result in positive DM policies in the workplace.

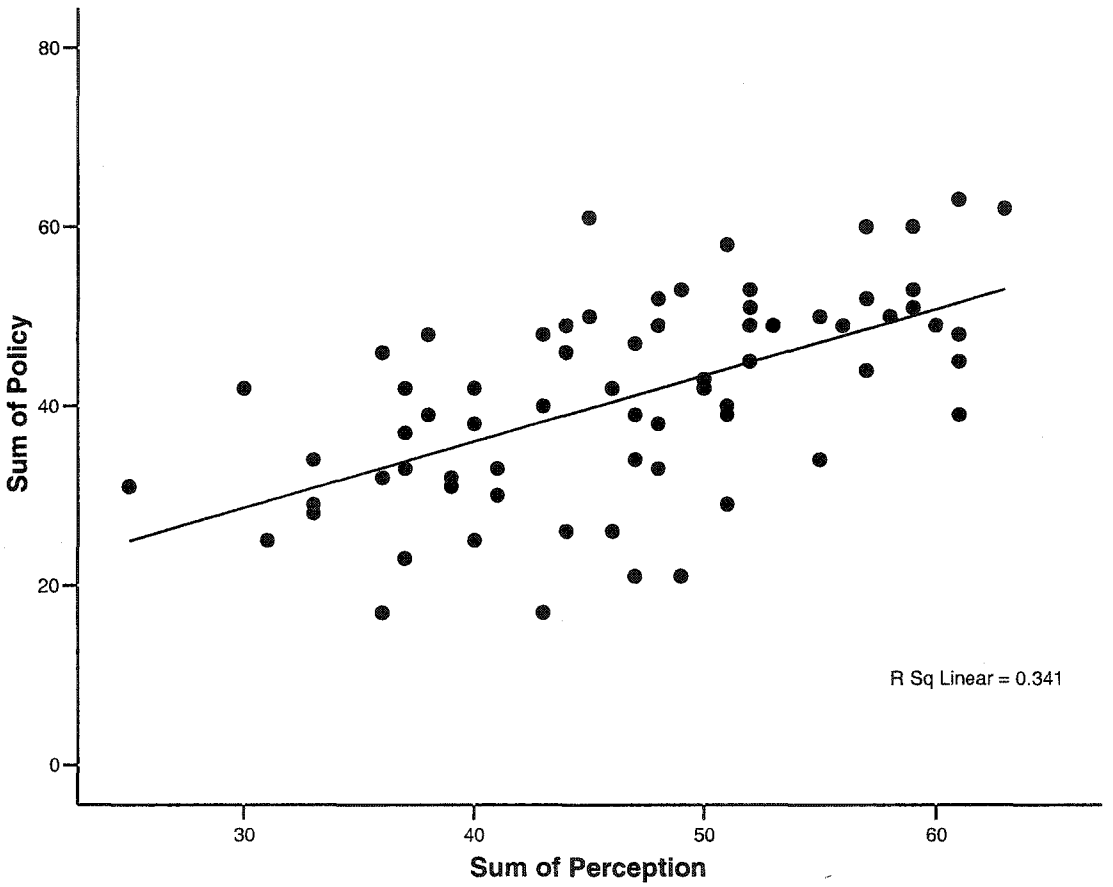

Figure 2. Scatterplot depicting the relationship between DM policy and DM perceptions.

H_2 looked at the predictive value of DM policies in Return-to-work outcomes. The reported frequency of claims (N=21) to evaluate the criterion variable of Return-to-work outcomes was less than expected. A more liberal approach was taken, therefore, when evaluating the data for this regression analysis by setting the alpha level at 0.1. The regression procedure to evaluate the prediction of Return-to-work outcomes from DM policies proved to be significant (p=.084). The strength of the relationship (r) was .39 indicating the overall accuracy in predicting return-to-work outcomes was moderate. Approximately 15% of the variance of Return-to-work was accounted for by its linear relationship with DM policies. As hypothesized, positive DM policies are predictive of positive return-to-work outcomes for the injured worker.

H_3 looked at the predictive value of DM perceptions in Return-to-work outcomes. The procedure to evaluate the prediction of Return-to-work outcomes from DM perceptions was non-significant (p>.1) as hypothesized. Table 4 presents a summary of the findings. The descriptive statistics presented in Appendix E will be reviewed further in the Discussion section to describe the patterns that have emerged from the analyses.

Table 4

Summary of Regression Analyses

Predictor Variable	Criterion Variable	df	R	R^2	F	Sig.
Perception	Policy	1/70	.58	.34	36.28	.000*
Perception	Return-to-work	1/19	.24	.06	1.18	.290
Policy	Return-to-work	1/19	.39	.15	3.33	.084**

*$p<.0005$
**$p<.1$

Objective (b). The overall hypothesis, H_1, for this objective stated that there is a difference between employer characteristics of (a) industry type, (b) unionization, (c) hourly paid workers, and (d) company size that are more likely to contribute to (1) positive perceptions of DM, (2) the presence of DM policies in the workplace, and (3) outcomes for the injured worker. To examine factors that influence the dependent variables of DM perceptions, DM policies and Return-to-work outcomes, multivariate analysis of variance (MANOVA) was conducted. The independent variables were employer characteristics of Industry Type, Unionization, and Hourly-paid workers and Company size. No significant differences were found (p>.05). Table 5 reports a summary of the results.

In this study, the data for the dependent variable Return-to-work outcomes (N=21) was not consistent with the remaining dependent variables (N=72) and in the MANOVA procedure a participant's data is excluded if scores are missing on any of the dependent variables. Therefore, despite the non-significant findings of the MANOVA and as this was a preliminary study, separate analyses of variances (ANOVA) were also conducted. Using the Bonferroni procedure (Green, Salkind, & Akey, 2000), each ANOVA was tested at the .01 level. The results of the ANOVAs revealed no significant differences (p>.01) among company characteristics to perceptions towards DM, the presence of DM policies in the workplaces or in Return-to-work outcomes for the injured worker. The summary results for the ANOVAs conducted are presented in Table 6. The descriptive statistics presented in Appendix E are further reviewed in the Discussion section to describe the patterns that have emerged from the analyses.

Objective (c). The general statement for the exploratory hypothesis, H_1, stated that differences between demographic factors such as (a) age, (b) gender, (c) years of service, (d)

union membership, (e) educational level, (f) pre-injury pay rate, (g) nature of injury and (h) location of injury are related to Return-to-work outcomes for the injured worker. To evaluate the relationship between these demographic factors of the individual and Return to work outcomes eight separate analyses of variance were conducted. No significant difference was found between the variables (p>.01) to support the hypothesis. F values and significance levels are presented in Table 7. The descriptive statistics presented in Appendix E will be reviewed further in the Discussion section to describe the patterns that have emerged from the analyses.

Table 5

Summary of Multivariate Analysis of Variance for Objective (b).

Independent Factor	Wilks' Λ	df	F	Sig	Partial Eta Square
Industry Type	.23	12/21	1.32	.28	.39
Unionization	.85	3/8	.48	.70	.15
Hourly-paid	.66	6/16	.62	.71	.19
Company size	.47	9/20	.77	.64	.22

$p<.05$

Table 6

Summary of Univariate Analysis for Objective (b).

Dependent variable: DM perceptions

Independent Factor	df	MS	F	Sig.	Partial Eta Square
Industry type	4/61	53.83	.64	.636	.040
Unionization	1/61	25.42	.30	.584	.005
Hourly-paid	2/61	1.90	.02	.978	.001
Company size	3/61	17.16	.21	.893	.010

Note R^2 = .088, adjusted R^2 = .061

*p<.01

Dependent variable: Sum of Policy

Independent Factor	df	MS	F	Sig.	Partial Eta Square
Industry type	4/61	287.04	2.36	.063	.134
Unionization	1/61	69.44	.57	.452	.009
Hourly-paid	2/61	51.92	.43	.654	.014
Company size	3/61	51.91	.43	.734	.021

Note R^2 = .179, adjusted R^2 = .044

*p<.01

Table 6 cont.

Summary of Univariate Analysis for Objective (b).

Dependent variable: Return-to-work outcomes

Independent Factor	df	MS	F	Sig.	Partial Eta Square
Industry type	4/10	.017	1.72	.221	.408
Unionization	1/10	.010	.61	.454	.057
Hourly-paid	2/10	.015	1.56	.258	.237
Company size	3/10	.019	1.92	.191	.365

Note $R^2 = .552$, adjusted $R^2 = .105$

*$p<.01$

Table 7

Summary of Analysis for Factors Contributing to Return to Work Outcomes

Independent Factor	df	MS	F	Sig.
Age	1/19	.003	.220	.644
Gender	1/19	.005	.443	.514
Tenure	1/19	.011	.097	.759
Union Member	1/19	.002	.166	.688
Education	4/16	.009	.834	.523
Hourly Wage	4/16	.008	.656	.631
Nature of Injury	3/17	.013	1.195	.341
Location of Injury	4/16	.012	1.184	.355

Note Dependent variable: Sum of Return to Work Outcomes

*$p<.01$

Discussion

The objectives of this study were (a) to examine the predictive value of DM perceptions and DM policies in Return-to-work outcomes for the injured worker; (b) to examine factors that influence DM perceptions, DM policies, and Return-to-work outcomes for the injured worker; and (c) to examine the relationship between demographic factors of the individual and return to work outcomes. Research supports that there are multi-dimensional individual factors as well as employer factors that contribute to the successful re-employment of injured workers. Research efforts for the current study, however, confined the investigation to the organizational level. Accordingly, organizational attitudes towards DM were measured. The factors used for the individual were demographic information that was available from personnel records. Thus, only organizations were sampled from within a Northern B.C. community for their policies towards and perceptions of disability management.

The instrument employed to achieve the objectives of the study was designed to capture the employer's behaviour and opinions towards DM. The factor analysis performed on the instrument demonstrated that the items loaded on clear dimensions of DM. The items selected to measure DM policy yielded four interpretable factors labeled (a) company DM strategy, (b) consensus for DM, (c) company DM practice and (d) company dissemination of DM. Similarly, the items selected to measure DM perceptions yielded three clear dimensions that were labeled (a) workplace accommodation, (b) company commitment, and (c) impact. With further development, this instrument has potential for measuring behaviours and attitudes towards DM. In particular, the value of the instrument would lie in assessing resistance towards DM and/or incongruence of attitudes towards DM across different levels

of an organization. The availability of an instrument that identifies areas of conflict such as resistance or incongruence may have high utility for the employer at the implementation or evaluation phases of DM programmes.

Objective (a) Examine the predictive value of DM perceptions and DM policies in Return-to-work outcomes for the injured worker.

The literature cited thus far, (Habeck et al., 1998; Unger, 1999) suggests that effective DM strategies rely on a work culture that combines a receptive and facilitative environment to assist the injured worker return to the workplace. To assess factors that predict outcomes for the injured worker, indices of DM perceptions, DM policies and Return-to-work outcomes were used. Mimicking the original modeling hypothesis, the general hypothesis for this objective was that DM perceptions predict the presence of DM policies; DM policies predict Return-to-work outcomes for the injured worker; but that DM perceptions alone are not a significant predictor of Return-to-work outcomes. Using regression analyses the value of DM perceptions and DM policies in predicting Return-to-work outcomes was analyzed.

DM perceptions. Consistent with expectations, the findings from the present study support the hypothesis that there is a relationship between DM perceptions and the presence of DM policies in the workplace ($p<.05$). The indicators revealed that this relationship is positive and strong ($r=.58$), therefore, it is reasonable to conclude that positive perceptions towards DM are a good predictor of the presence of DM policies in the workplace. Previous research supports that the effectiveness of any DM programme relies on a facilitative and receptive work environment (Amick et al., 2000). Research also reveals that people-oriented work cultures foster DM policies that are successful at re-integrating injured workers to the workplace (Habeck et al., 1991). Moreover, the incidence rate of disability is reported as an

indicator of the type of culture within an organization (Habeck, Hunt, et al, 1998). Low incidence rates are associated with cultures that foster positive perceptions of disability management strategies further highlighting the importance of a receptive and facilitative environment in the whole disability management process. In a similar vein, the findings from this study support that positive perceptions of DM are significant predictors of positive DM policies in the workplace.

The regression analysis to evaluate the predictive value of Return-to-work outcomes from DM perceptions was not significant ($p>.1$) despite the liberal approach taken in consequence to the lower response rate ($N=21$) for Return-to-work outcomes. This study hypothesized that DM perceptions would not be a contributing factor to Return-to-work outcomes on the basis that DM perceptions alone are not singularly sufficient to impact Return-to-work outcomes without DM policies. A receptive environment is not sufficient without a facilitative environment. Policy development and programme implementation are important processes in promoting disability management (NIDMAR, 2003). Despite the inadequacy of the claims data ($N=21$) to find a statistical significance, the effect size ($R^2=.06$) which accounts for 6% of the variance, would also support the speculation that DM perceptions alone are not a contributing factor to improving Return-to-work outcomes.

DM policies. This study hypothesized that DM policies are a significant contributor to Return-to-work outcomes. As the response rate ($N=21$) for Return-to-work outcomes did not correspondent to the response rate of DM policies ($N=72$) a liberal approach was taken with this regression analysis, thereby, setting the alpha level at $p<.1$. The findings of the regression analysis did support the contention ($p<.1$) that the existence of more positive DM policies is a predictor of positive outcomes for the injured worker. With such a liberal

approach these findings are tentative, however, the results are in agreement with existing research (Aronoff & Feldman, 2000; Habeck, Hunt, et al., 1998). It is reasonable to speculate that a larger sample size would provide stronger support for the importance of DM policies in predicting return-to-work outcomes for the injured worker.

Extrapolating from the data presented in Appendix E further supports the hypothesis that companies are favourably disposed to managing disability in the workplace. In this study, 66% of injured workers continued working for the same organization fives years after the initial return to work. Previous studies have suggested a lower rate of job maintenance when employment status is monitored over time. Butler et al. (1995), for example, reported that only 35% of injured workers studied during the timeframe 1989-1990 maintained employment status. That 66% of injured workers maintained employment in this study may be indicative of greater employer awareness to the benefits that can be derived from managing disability within its workforce. Employers reported that all necessary accommodations were provided in 85% of cases and 25% of injured workers had subsequent relapses. Sixty percent of injured workers returned to their regular pre-injury duties. Subsequent reduction in earnings was reported in 20% of cases. This pattern may begin to refute the unwritten rule that the likelihood of negative outcomes is markedly increased following an injury claim as described by Aronoff & Feldman (2000).

In summary, the findings of this study support that more positive perceptions towards DM are a good predictor for the presence of DM policies in the workplace. The findings of the study also supports that DM policies predict Return-to-work outcomes. Positive perceptions are not good singular predictors of Return-to-work outcomes. The overall findings, however, do suggest a pattern of positive outcomes for the injured worker. The

tentative support for the predictive value of DM policies may be attributable to the small sample size. Participation rates in the claims portion of the questionnaire (N=21) did not correspond to overall participation rates (N=72) and required an adjustment to a less stringent alpha level. Future investigation with a higher response rate may tap the importance of DM policies more successfully than the current study.

Objective (b) Examine factors that influence DM perceptions, DM policies, and Return-to-work outcomes.

The role of the work environment represents a very significant part in the outcome of the disability process (Habeck, Hunt, et al., 1998). The implementation and success of disability management strategies is cited as being dependent on labour-management commitment, support and active participation (Jarvikoski & Lahelma, 1980). Certain characteristics of the workplace, union presence for example, have posed challenges to the acceptance of and co-operation with disability management strategies (Baril & Berthelette, 2000). Accordingly, the hypothesis for this objective stated that there are differences between employer characteristics of (a) Industry type, (b) Unionization, (c) Hourly-paid workers, and (d) Company size that are more likely to contribute to (1) positive perceptions of DM, (2) the presence of DM policies, and (3) outcomes of the injured worker. Contrary to expectations, the analyses conducted fail to reject the null hypothesis suggesting that differences in the characteristics of Company type, Unionization, and Hourly-paid workers, and Company size are not contributing factors to perceptions towards DM, the presence of DM policies or return-to-work outcomes. Despite the lack of findings, an interesting set of patterns have emerged from the descriptive data presented in Appendix E that are discussed further.

Industry type. The conclusion from this study is that differences among industry type were not a factor in DM perception, the presence of DM policies or return-to-work outcomes for the injured worker. The pattern derived from the data, however, in regard to Industry type warrants further comment. The majority of claims reported were from industries where it can be speculated that the working environment and/or demands of the job pose a high risk of injury. Companies involved in aspects of the forestry/lumber industry, manufacture and construction accounted for 47.6% of claims reported, and 60% maintained employment 5 years post injury. In comparison, speculating that companies involved in consulting, education or retail, sales and service for example, pose less risk to injury, these companies comprised 38% of claims reported. Of these claims, 62.5% maintained employment 5 years post injury. The pattern suggests that environments posing less risk of injury have a lower claims rate than high risk environments but that return-to-work outcomes are similar in both environments. As the impact of job demands was not examined, the pattern must be viewed cautiously. Nonetheless, an interesting future direction would be to investigate if the comparable return-to-work outcomes holds true for the different types of industry and whether any particular factor(s) contributes to comparable return-to-work outcomes from sectors that pose different injury risks.

Unionization. Renaud (2002) empirically supported the contention that union workers operate in poorer working conditions compared to their non-union counterparts. Non-union workers presented with promotion and career opportunities, pleasant working environments and greater locus of control over their productivity reported greater satisfaction in their jobs than union counterparts without such working conditions. The level of dissatisfaction in the job is due to working conditions and not union membership. Consistent

with the findings of Habeck et al. (1991) it is more likely that such workplaces would be unionized as unions tend to organize in situations of poor working conditions and negative labour relations. Both these factors are conducive to high claims rates (Habeck et al., 1991). Accordingly, the expectation would be that unions are involved to ensure the presence of DM policies. The evidence for the contribution unionization makes to the presence of DM policies, however, is inconclusive. Akabas (1996) posits the move towards DM has a longstanding history with trade unions stating "unions cut their teeth on DM long before the concept was officially identified" (p.33). In contrast, Shoemaker (1989) reports that 64% of unions surveyed remained mute on the issue of DM in negotiated contracts. Research indicates that unions are successful in protecting the injured worker's job but are reportedly less successful in maintaining the worker's employment status (Butler et al., 2001). In the current study, of the 21 claims information provided on injured workers, union members maintained their employment five years post-injury in 43% of cases where unions were present in 29.2% of all companies surveyed. Unionized companies indicated they did not have specific clauses in the bargaining agreement related to DM in 42.8% instances. Language related to early return-to-work was not included in the bargaining agreement for 62% of the unionized companies despite clear language and explicit policy being cited as one of the basic elements of successful DM (Westmorland & Williams, 2002). The pattern elicited from the data suggests that unionized workplaces continue to have higher claims rates (57.1%) than non-union establishments (42.9%) but continue to remain mute (64% from Shoemaker study, 62% in the current study) on the issue of specific disability management language in collective bargaining agreements.

Company size. Although the current study did not find a significant difference between size of company and perceptions, policies and return-to-work outcomes, existing research (Cunningham & James, 2000; Habeck, Hunt, 1998) does suggest that larger companies are more likely to be actively managing disability in the workplace; are better able to provide accommodations than medium to smaller sized companies; and that larger companies are more likely to have computerized record keeping of absenteeism and claim trends. The latter was certainly observed during the data collection stage of this study. In the smaller companies memory and paper files were relied upon for the initial identification of workers and the extraction of relevant claim information requested in the survey. Of the 15 companies that comprised Group 1 (payroll under $200,000) all relied on WCB and their insurance carrier for disability management support and return to work initiatives. Two companies indicated they had a designated contact person within the organization for working with WCB. In comparison, of the 21 companies comprising Group 4 (payroll over million dollars) 10 companies provided some form of disability management. Among the larger organizations one third of companies have specific DM language in their employment contracts and/or bargaining agreement. The pattern that larger companies are more active in managing disability continues to hold true in this study.

In summary, the findings for objective (b) have found no differences between employer characteristics of (a) Industry type, (b) Unionization, (c) Hourly-paid workers, and (d) Company size that are more likely to contribute to (1) positive perceptions of DM, (2) the presence of DM policies, and (3) outcomes of the injured worker. Interesting patterns did emerge from the data. In particular, the patterns suggest that environments posing less risk of injury have a lower claims rate than high risk environments but that return-to-work

outcomes are similar in both environments; that unionized workplaces continue to have higher claims rates than non-union establishments but continue to remain mute on the issue of specific disability management language in collective bargaining agreements; and that larger companies are more active in disability management than smaller companies.

Objective (c) Examine the relationship between demographic factors of the individual and return to work outcomes.

In an exploratory vein, this study looked at demographic factors that are supported by research to influence return-to-work outcomes for the injured worker (refer to Worker Demographics, p20). To assess the significance between these factors and return to work outcomes, separate ANOVAs were conducted. The independent variables were Age, Gender, Tenure, Union membership, Education, Hourly pay-rate, Nature of injury and Location of injury. As the evidence (Butler et al., 1995; Shaw & Polatajko, 2002; Crook et al., 2002) supports that these factors are implicated in return to work rates, it was expected that a difference would be found between these variables and return to work outcomes. Contrary to previous research the variables proved non-significant in this study ($p<.01$) suggesting that these factors do not contribute to outcomes for the injured worker. Although the findings are not significant, the descriptive data presented in Appendix E will be discussed further to describe some of the patterns that were found.

Age and Tenure. The general consensus is that the older worker is associated with longer and less successful recovery periods and is considered to have less potential for maintaining employment. In support of the consensus, previous research (e.g. Blackwell et al., 2003; Butler et al., 1995) has found that age is a determinant in return to work outcomes. For example, of the 246 successful return-to-work outcomes monitored by Blackwell, 211

were less than 50 years of age. While the prevalence of work disability increases with age (Berkowitz & Hill, 1989) and reports of disability are twice as likely for workers aged 45-54 than workers aged 25-34, the age factor is not a clear-cut explanation for the poorer return to work rates. Greenblum (1979) found that the older worker was less likely to be offered rehabilitative services. In examining a Vocational Rehabilitation Services Administration, Greenblum revealed that the effect of rehabilitation on employment was greater for older, middle-aged workers than for younger workers. Rehabilitated older workers maintained employment at a higher rate than non rehabilitated older workers whereas rehabilitation had less effect on employment rates of rehabilitated and non-rehabilitated younger workers. Baril et al. (2003) found a similar trend in their review of return to work outcomes among Quebec workers' compensation claims. Return to work measures were more likely targeted to workers within the age range 30-39 years. Although not conclusive, it appears that the older worker is generally disadvantaged in return to work potential, not by age, but by lack of access to DM strategies.

The current study varies somewhat from this pattern. Sixty-two percent of injured workers in this study were 40 years or older and of these, only 15.4% did not maintain employment with their pre-injury employer. From all claims reported, the older worker returned to their regular duties in 38% of instances even though 85% of employers agreed the necessary accommodations were provided and the remaining 15% indicated they somewhat agreed that the necessary accommodations were provided. The employer's willingness to accommodate the older worker would suggest that employers are predisposed to continue the employment of their own workers with whom they have established a work history. In the current study, the mean length of service for older employees was 15 years. Looking at all

cases, the minimum duration of pre-injury employment was five years with 57% of cases employed for 13 or more years with the same employer. Furthermore, 85% of injured workers were in the middle to higher wage bracket; and the majority required company training or higher to perform their duties. The suggestion is that seniority may be indicative of a greater ability to adapt or compensate for limitation (Cater & Smith, 1999, Baril et al., 2002). It may also be reasonable to speculate that the return to work rate of the older worker reflects the work skill and knowledge possessed. Accommodating older workers may also be indicative of employers' realization that these skills and knowledge cannot be so readily replaced anymore.

Nature and Location of injuries. The hypothesis that nature and location of injury would influence return to work outcomes was not supported. The inadequacy of the claims data did not detect a relationship that is generally confirmed by previous research. The expectation for the study was that low back sprains and strains would constitute the majority of injury and be consistent with WCB reports. While sprains and strains did constitute 66.6% of the nature of injuries, the predominant location of injury was upper limbs/shoulders (38.1%), followed by lower limbs (28.6%). Although the findings were not as expected the low frequency of occurrence of back injury may be more reflective of the sample population. The focus of the study was on claimants who had successfully returned to work. Back injury is progressive and chronic and high risk for continued disability. Employers may have selectively omitted this type of claim. Interestingly, Baril & Berthelette (2000) found that early return-to-work measures were more likely applied in cases of injury to upper limbs and shoulders. The speculation was that these injuries were more easily accommodated by employers. This is the pattern that may have been tapped into in this study as severity of

injury was not a factor that was investigated. The ease with which an employer can accommodate a disability is an area for consideration in future investigation of the determinants of outcomes for workers returning to the workforce.

In summary, the findings for objective (c) examining the relationship between demographic factors of the individual return-to-work outcomes were not significant. The patterns derived from the data suggest, however, that employers are predisposed to continue the employment of older workers with whom they have established a work history. The majority of cases reported in this study worked 10 or more years with the employer. The majority were in the higher wage and education brackets. It may, therefore, be reasonable to speculate that accommodating older workers is indicative of the employer's realization that the skills and knowledge possessed by older worker cannot be readily replaced anymore. Return-to-work outcomes may be dependent on the ease with which an employer can accommodate an injured worker rather than nature or location of injury.

Conclusion

This study examined factors at the organizational level that influence return to work outcomes for the injured worker. The objectives were (a) to examine the predictive value of DM perceptions, DM policies, and Return-to-work outcomes for the injured worker; (b) to examine factors that influence DM perceptions, DM policies and Return-to-work outcomes; and (c) to examine the relationship between demographic factors of the individual and Return to work outcomes. The objectives of the study were accomplished. The findings of this study support that more positive perceptions towards DM are a good predictor for the presence of DM policies in the workplace. It was also demonstrated, albeit at a less stringent level, that DM policies are predictive of return-to-work outcomes for injured workers. The study also supported that DM perceptions are not a singular predictor of return-to-work outcomes. Overall, these results support the general body of literature that suggests effective DM relies on a work culture that combines a receptive and facilitative environment to assist the injured worker return to the workplace (see for example Habeck et al., 1998; Shrey, 1998; Unger, 1999).

While the remaining hypotheses were not supported, the data revealed some interesting patterns. For example, from the findings a pattern is revealed that suggests environments posing less risk of injury have a lower claims rate than higher risk environments but that return-to-work outcomes are similar in both environments. A plausible explanation may be the employer's competitive need to improve WCB experience ratings and contain premium and disability related costs, thereby, leading to the implementation of DM strategies (see for example Dyck, 2003). Another pattern suggests that unionized workplaces continue to have higher claims rates than non-unionized

workplaces but that unions continue to remain mute on the issue of specific disability management language in collective bargaining agreements (see Akabas, 1996; Butler et al., 2001; Shoemaker, 1989). Both these patterns would be interesting avenues for further study, particularly, the union's perceptions towards disability management strategies and the factors contributing to labour-management hesitancy to include specific DM language in bargaining agreements. The pattern derived from the data also suggests that employers are predisposed to continue the employment of older workers with whom they have established a work history. It would be interesting to explore whether this pattern is specific to the rural population used in this study or whether this pattern holds in more urban areas where the labour pool is larger.

The most relevant limitation for this study was sample size. Sample size was based on detecting a medium effect. This proved to be an insufficient source of claims data to address the issue of outcomes for injured workers. The reported frequency of claims (N=21) was lower than expected and did not correspond to the survey response rate (N=72). This limitation draws particular attention to the need for collaboration with the WCB to supplement employer reports of claims data. While there is no reason to doubt the integrity of the information provided, some employers may have limited their co-operation and failed to report claims even though the claims met the inclusion criteria. A more effective approach to be considered in future investigations is the initial step of identifying eligible claims through WCB collaboration before approaching employers for their input.

Moreover, WCB collaboration may avoid the potential for selection bias. In the current study, twenty-nine on-site visits were conducted. In these instances, the principle researcher had the opportunity of completing the survey questionnaire with the employer and

witnessed the extraction of the required claim's data from the actual claim's file. While the employers were graciously co-operative in providing reliable and valid information on the claims, they may have been selective in the type of claims reviewed. Employers may have singled out the uncomplicated claims that were easily accommodated to portray the employer in a favourable light. Selectivity was similarly noted by Baril & Berthelette (2000) who found return-to-work measures were more likely applied in cases that the employer could more readily accommodate. Furthermore, the inclusion criteria used in the current study (*Minimum 6 weeks paid disability compensation by WCB)* was intended to eliminate transient, short-term absences so 'genuine' medical conditions could be compared. Future studies should consider residual functional limitations following maximum medical recovery rather than severity of injury as a factor that impacts return to work outcomes for the injured worker. To this end, structural equation modeling as originally intended for this study could be most aptly applied to address the issue of mediating factors that influence outcomes for the injured worker. This is an area worthy of more detailed research.

To close on a positive note, the strength of the study lies in the potential for the survey instrument and it warrants further development. The questions relating to perceptions and policies loaded on clear dimensions and may be valuable in identifying incongruent attitudes towards disability management between different levels of an organization. Resistance to disability management is demonstrated by research to be problematic in the implementation and success of DM programmes. Such a tool could prove beneficial during the regular evaluation process of the DM programme highlighting programme deficiencies and/or educational needs. Actively addressing such issues within a workplace may maintain collaborative efforts between labour and management – a basic

element for success. The availability of a tool that identifies areas of resistance to disability management strategies would have high utility for the employer. As a future direction this would merit further investigation.

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Appendix A

Letter of Introduction

Company Official
Company Name
Street address
Town
Postal Code

Dear Name,

With the enclosed questionnaire we are asking for your participation. We are gathering information about the impact of disability management strategies in improving the employment retention rate among workers who have incurred a work injury. We have randomly selected companies covered by WCB insurance in the Prince George region and are contacting organizations like yours to further understand the nature of company policy with regard to disability management and the injured worker.

Whether or not your organization provides disability management strategies, we would greatly appreciate your feedback. While participation in the survey is voluntary, there is no substitute for the knowledge and insights that you can provide. Your participation in completing the attached questionnaire is valued and appreciated as understanding the impact of company policy will be of benefit to companies and injured workers.

We have provided an information sheet covering all the details of the study. Should you have any questions about the questionnaire or research project, please feel free to contact us. We will also make telephone contact with you over the coming weeks to discuss the project. For your convenience we have a dedicated phone line to answer your queries and fax line for the return of your completed questionnaire.

We look forward to speaking with you directly. We thank you in advance for your participation, your valuable time, and assistance.

Yours sincerely,

Appendix B

Sample Questions from Questionnaire

Disability Management Policies

Please read each of the following statements and indicate (by circling) the degree to which you agree.

Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree
1	2	3	4	5

1.	We regularly educate and inform all employees about our early return-to-work options.	1	2	3	4	5
2.	We have specific clauses in the employment contract and/or bargaining agreement requiring disability management.	1	2	3	4	5
3.	We have specific clauses in the employment contract and/or bargaining agreement requiring early return-to-work.	1	2	3	4	5
4.	Any of our workers can utilize our disability management programmes to assist with their return-to-work.	1	2	3	4	5

Perceptions of Disability Management

Please read each of the following statements and indicate (by circling) the degree to which you agree.

Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree
1	2	3	4	5

1.	An employee returning to duty with workplace restrictions lowers morale within that work area.	1	2	3	4	5
2.	An employee returning to work with workplace restrictions hinders the recovery process of that worker.	1	2	3	4	5
3.	Accommodating workers with workplace restrictions is costly to the employer.	1	2	3	4	5
4.	Accommodating workers with workplace restrictions is a waste of employer resources.	1	2	3	4	5

Demographic Information Regarding Injured Worker

1. Age: _____
2. Gender: M _____ F _____
3. Year of Hire: _____
4. Union Member: Yes _____ No _____
5. Education required for his/her job:
   a. No specific education required _____
   b. Company training _____
   c. Trade School _____
   d. College _____
   e. University _____

Injured Worker Return-to-Work Information

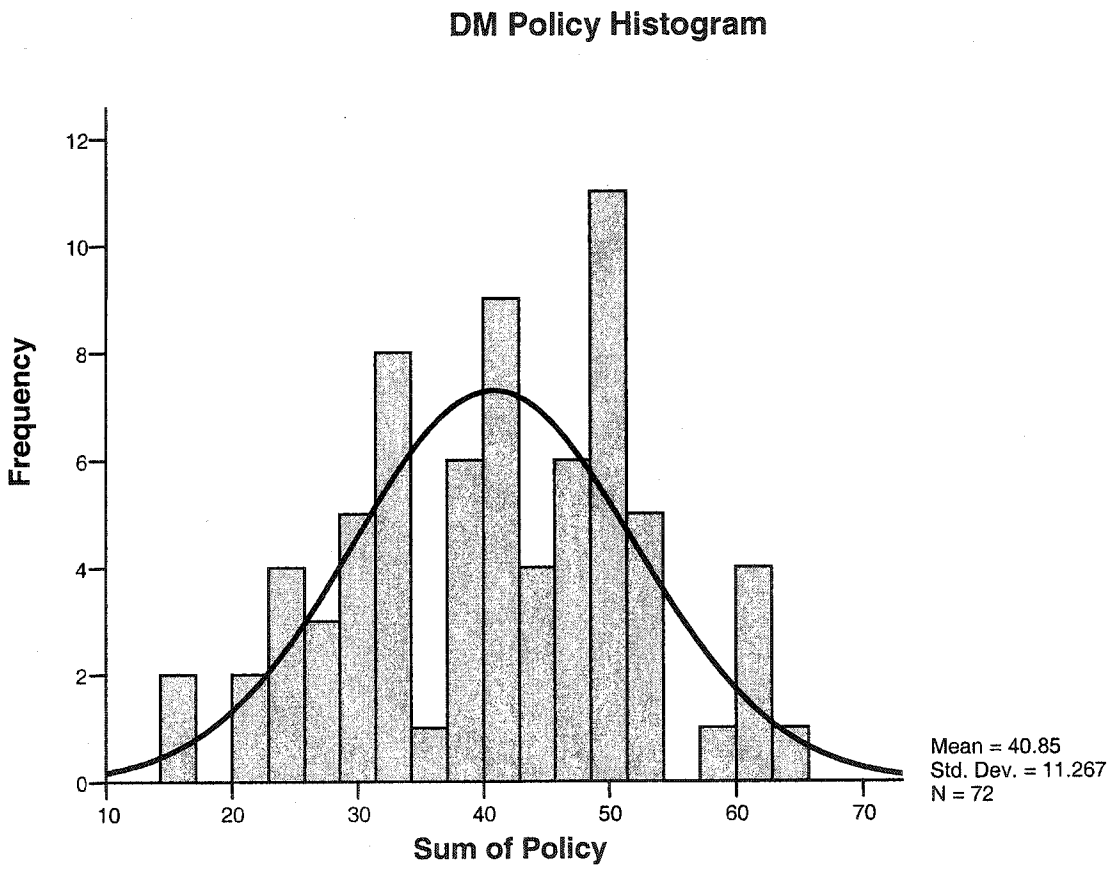
Please read each of the following statements and indicate (by circling) the degree to which you agree.

Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree
1	2	3	4	5

1. This worker returned fully to his/her regular duties.	1	2	3	4	5
2. This worker's earnings were subsequently reduced upon returning-to-work (e.g., he/she was accommodate in an lower-paying alternate position; went part-time etc).	1	2	3	4	5
3. This worker had subsequent relapses of similar condition for similar durations.	1	2	3	4	5

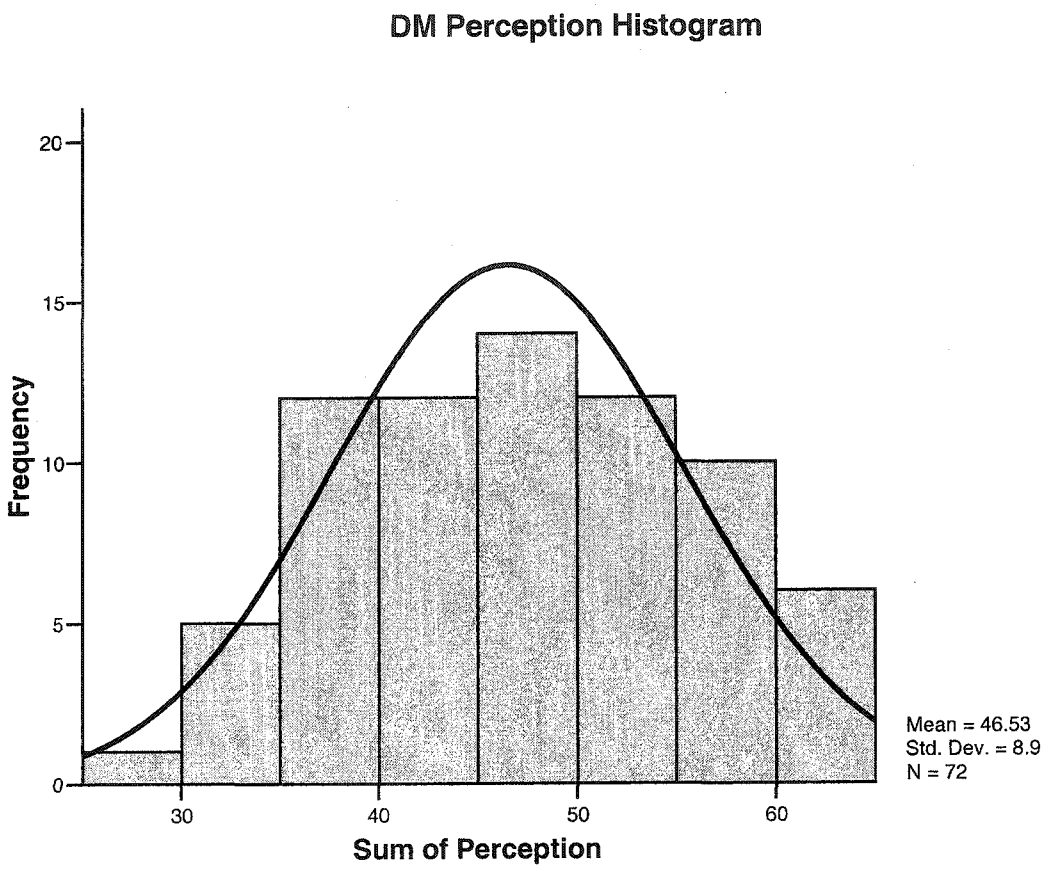
Appendix C

DM Policy Histogram


DM Policy Histogram
Frequency
12
10
8
6
4
2
0
10
20
30
40
50
60
70
Sum of Policy
Mean = 40.85
Std. Dev. = 11.267
N = 72

Appendix D

DM Perceptions Histogram


DM Perception Histogram
Frequency
20
15
10
5
0
30
40
50
60
Sum of Perception
Mean = 46.53
Std. Dev. = 8.9
N = 72

Appendix E

Descriptive Data

Company	N	Claims	Full Duty	Full Pay	Re-lapse	Accom	Retain
Manufacture	5	2	1	2	1	2	2
Construction	8	3	1	1	1	3	2
Repair	5	1	1	1		1	1
Hospitality	3	1	1	1		1	1
Retail	3	1	1			1	1
Sales/Service	10	2	2	2		2	2
Transportation Service	2	1				1	1
Forestry	3	2	2	2		1	
Lumber	8	3	3	3		3	2
Trucking	3						
Healthcare	6	1		1		1	1
Education	5	2		2	2	2	1
Consulting	11	2	1	2	1	2	

High Risk	Claims	%	Retain	%
Forestry/Lumber/Manufacture/Construction	10	47.6	6	60.0
Low Risk				
Consulting/Education/Retail/Sales/Service	8	38.0	5	62.5

Company Demographics	Sample		Claims		Full Duty		Full Pay		Relapse		Accom.		Retain	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Industry Type														
Manufacture/Construction/Repair	18	25.0	6	28.6	5	23.8	4	19.0	2	9.5	6	28.6	5	23.8
Retail/Hospitality/Sales,sevice	18	25.0	5	23.8	4	19.0	3	14.3	1	4.8	5	23.8	5	23.8
Forestry/Lumber/Trucking	14	19.4	5	23.8	5	23.8	5	23.8	0		4	19.0	2	9.5
Health care/Education	11	15.3	3	14.3	0		3	14.3	2	9.5	3	14.3	2	9.5
Consulting	11	15.3	2	9.5	1	4.8	2	9.5	1	4.8	2	9.5	0	
Unionization														
Yes	21	29.2	12	57.1	7	33.3	9	42.9	4	19.0	12	57.1	9	42.9
No	51	70.8	9	42.9	8	38.1	8	38.1	2	9.5	8	38.0	5	23.8
Hourly-paid														
Hourly < 40%	17	23.6	4	19.0	3	14.3	4	19.0	1	4.8	3	14.3	1	4.8
Hourly < 80%	20	27.7	4	19.0	3	14.3	4	19.0	1	4.8	4	19.0	2	9.5
Hourly >81%	35	48.7	13	62.0	9	42.8	9	42.8	4	19.0	13	62.0	11	52.5
Company Size														
Payroll under $200,000	15	20.8	2	9.5	1	4.7	2	9.5	1	4.8	2	9.5	2	9.5
Payroll under $599,000	18	25.0	4	19.0	3	14.3	2	9.5	2	9.5	4	19.4	4	19.0
Payroll under $999,000	18	25.0	4	19.0	4	19.4	4	19.0	0		4	19.4	2	9.5
Payroll over $1 million	21	29.2	11	52.5	7	33.3	9	42.8	3	14.3	10	47.6	6	28.6
Individual Demographics														
Age (Mean=43.95 yrs)														
Less than 40 yrs			8	38.1	7	87.5	6	75.0	2	25.0	5	62.5	3	37.5
40 yrs & greater			13	61.9	8	61.5	12	92.3	4	30.8	11	84.6	11	84.6
Gender														
Male			13	61.9	10	76.9	11	84.6	3	23.1	10	76.9	9	69.2
Female			8	38.1	3	37.5	7	87.5	2	25.0	5	62.5	5	62.5

Individual Demographics	Sample		Claims		Full Duty		Full Pay		Relapse		Accom.		Retain	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Tenure (Mean=13 yrs)														
Less than 13 yrs			9	42.8	6	66.7	8	88.9	2	22.2	7	77.8	6	66.7
13 yrs or greater			12	57.1	7	58.3	9	75.0	3	25.0	8	66.7	8	66.7
Education														
None			6	28.6	4	66.6	5	83.3	3	50.0	4	66.6	3	50.0
Company			7	33.3	4	57.1	5	71.4	1	14.3	5	71.4	5	71.4
Trade			5	23.8	3	60.0	4	80.0	1	20.0	4	80.0	4	80.0
College			2	9.5	1	50.0	2	100	0		1	50.0	1	50.0
University			1	4.8	1	100	1	100	0		1	100	1	100
Pay-rate														
$8-11			1	4.8	1	100	1	100	0		1	100	1	100
$12-15			2	9.5	1	50.0	2	100	1	50.0	2	100	1	50.0
$16-19			7	33.3	3	42.8	6	85.7	3	42.8	4	57.1	5	71.4
$20-23			7	33.3	5	71.4	4	57.1	0		6	85.7	5	71.4
over $24			4	19.0	3	75.0	4	100	0		2	50.0	2	50.0
Nature of Injury														
Sprain			7	33.3	5	71.4	6	85.7	1	14.3	6	85.7	4	57.1
Strain			7	33.3	3	42.8	5	71.4	3	42.8	6	85.7	5	71.4
Fracture			3	14.3	3	100	3	100	1	33.3	1	33.3	2	66.7
Other			4	19.0	2	50.0	3	75.0	1	25.0	2	50.0	3	75.0
Location of Injury														
Head/neck			1	4.8	0		0		0		0		1	100
Lower back			3	14.3	2	66.7	3	100	1	33.3	2	66.7	2	66.7
Trunk			3	14.3	2	66.7	2	66.7	1	33.3	3	100	1	33.3
Upper limbs/Shoulders			8	38.1	5	62.5	7	87.5	2	25.0	5	62.5	5	62.5
Lower limbs			6	28.6	4	66.7	5	83.3	1	16.7	5	83.3	5	83.3

Perception

	Q1.	Q2.	Q3.	Q4.	Q5.	Q6.	Q7.	Q8.	Q9.	Q10.	Q11.	Q12.	Q13.	Q14.
Mean	3.96	4.08	2.76	3.94	2.26	4.29	2.94	3.49	3.65	3.58	4.10	4.06	3.26	3.40
SD	1.24	1.24	1.32	1.33	1.37	1.11	1.51	1.35	1.28	1.22	1.02	0.85	1.14	1.11
Frequency														
1	3	5	12	5	29	3	16	10	5	6	2	0	4	4
2	8	4	25	9	18	0	17	4	6	1	0	1	4	2
3	14	10	14	8	10	8	12	21	17	25	22	21	51	38
4	11	14	10	13	7	18	9	15	20	20	13	23	0	12
5	36	39	11	37	8	42	18	22	23	19	35	27	8	15

Policy

	Q1.	Q2.	Q3.	Q4.	Q5.	Q6.	Q7.	Q8.	Q9.	Q10.	Q11.	Q12.	Q13.	Q14.
Mean	2.76	2.50	2.25	3.78	3.18	2.57	3.00	2.88	3.68	3.78	3.56	3.07	3.22	3.85
SD	1.52	1.52	1.32	1.44	1.53	1.56	1.52	1.66	1.42	1.50	1.54	1.55	1.48	1.30
Frequency														
1	24	31	33	11	16	28	19	25	11	12	15	20	15	7
2	7	3	4	1	9	10	7	7	5	4	4	7	9	3
3	17	22	25	14	14	14	19	13	6	6	5	9	11	15
4	10	3	4	13	12	5	9	6	24	16	22	20	19	16
5	14	13	6	33	21	15	18	21	26	34	26	16	18	31