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Constant Negotiating: Managing Work-Related Musculoskeletal Disorders While Remaining at the Workplace

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Abstract

We used grounded theory to explore processes and strategies used by workers affected by work-related musculoskeletal disorders (WMSDs) while they remained in the workplace, and we developed a theory to describe the overall process. Participants included 25 workers affected by WMSDs who were currently employed in various workplaces in Newfoundland and Labrador, Canada. The theoretical model has five main phases: (a) becoming concerned, (b) getting medical help, (c) dealing with the workplace, (d) making adjustments to lifestyle, and (e) taking charge, each with separate subphases. Constant negotiating was the core variable that explained the overall process, with workers engaged in negotiations with others in occupational, health, and social contexts. Using a two-dimensional figure, we illustrate the negotiation strategies workers used. We discuss implications for health care, workplaces, education, and research for creating a culture of understanding and respect for injured workers who wish to remain working after developing WMSDs.

Keywords

grounded theory; illness and disease, chronic; musculoskeletal disorders; nursing; occupational health; research, qualitative; workplace

Work-related musculoskeletal disorders (WMSDs) are a substantial problem in the workplace, resulting in human suffering, lost time, and lower productivity (Aas, Thingbo, Holte, Lie, & Lode, 2011). The costs of occupational health problems are high to the individual, health care, industry, and government (Leigh, 2011). In Canada, WMSDs are a leading cause of work disability and sick leave (Institute for Work and Health, 2007). It is difficult to estimate exactly how many working Canadians are affected by this condition. Tjepkema (2003), on the basis of the 2000–2001 Canadian Community Health Survey, estimated that the prevalence of repetitive strain injuries were present in 10.1% of the Canadian population older than 20 years of age, and 55% of these were work related. In the United States in 2011, musculoskeletal disorders accounted for 33% of the workplace injuries that were recorded for work absences (Bureau of Labor Statistics, 2012). Workers in any occupation might be at risk to develop this condition, with some occupations having a greater number of known risk factors, which include (a) a greater number of repetitive tasks; (b) poorly designed workstations; (c) excessive or rapid production demands; (d) standing or sitting in awkward, stationary periods for long periods of time; or (e) prolonged exposure to cold or vibration (Bang et al., 2005; Cole, Ibrahim, & Shannon, 2005).

Many of the researchers who have studied WMSDs focused on incidence and prevalence, identification of risk factors (both occupational and nonoccupational), lost time, attrition, and costs (Koehoorn, Cole, Hertzman, & Lee, 2006). Other researchers have focused on treatments for this condition or effects of rehabilitation, including return-to-work (RTW) programs (Koehoorn et al.; Pincus, Greenwood, & McHarg, 2011); however, not all workers who develop WMSDs withdraw from work or go into formal disability management programs. This condition is often underreported by workers, and many attempt to stay at work despite having developed this condition (de Vries, Brouwer, Groothoff, Geertzen, & Reneman, 2011). It is important to understand the experience of injured workers who develop WMSDs and how they manage this condition at work. Therefore, our research question was aimed at understanding processes and strategies used by

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employed injured workers who did not enter formal RTW and other disability management programs offered at the workplace that enabled them to remain working after they developed WMSDs.

Background

The term *work-related musculoskeletal disorders* describes a wide variety of injuries to the muscles, tendons, and nerves that are known to develop gradually over an extended period of time in susceptible workers (Tyrer, 1999). Specific musculoskeletal disorders include but are not limited to carpal tunnel syndrome, tendonitis, bursitis, tenosynovitis, epicondylitis, and myofascial pain (Canadian Centre for Occupational Health and Safety [CCOHS], 2005). It has been fairly well documented that there is a stage progression in the development of WMSDs (CCOHS). In early stages, symptoms often include aching and tiredness that is usually confined to, but does not interfere with, work activities. Many ignore the early stage or do not realize the significance of the symptoms and progress to the intermediate stage, in which the symptoms are no longer confined to work activities. If left untreated and the person continues with the same work activities that contributed to the problem, late-stage symptoms develop. This stage is marked by persistent chronic pain, tiredness, and weakness, so that even light work is difficult to perform. It is usually at the late stage that sufferers might go to see various health care providers in attempting to find symptom relief (Proctor, Mayer, Gatchel, & McGeary, 2004).

WMSDs are difficult to diagnose because diagnostic tests at any stage are often inconclusive; therefore, affected workers visit numerous health care providers before a diagnosis is made. Sufferers are faced with misunderstanding, distrust, and suspicion from others when they seek help for this “invisible” illness condition (Beardwood, Kirsh, & Clark, 2005; Reid, Ewan, & Lowy, 1991; Tarasuk & Eakin, 1995). The workers who are affected by WMSDs might decide to stay off work for a short period of time while symptoms resolve (Svajger & Winding, 2009), or take part in RTW programs designed for those deemed healthy enough to resume employment (Cole, Mondloch, Hogg-Johnson, & Early Claimant Cohort Prognostic Modeling Group, 2002).

Some criticisms of RTW programs are that they do not always result in providing adequate supports and accommodations for injured workers (Shaw, Segal, Polatajko, & Harburn, 2002). Those found to be less successful in these programs included older workers, workers who feared reinjury or perceived a lack of support at the workplace, or who had a poor understanding of their injuries (Berecki-Gisolf, Clay, Collie, & McClure, 2012; MacEachen, Clarke, Franche, Irvin, & Workplace-based Return to Work Literature Review Group, 2006). Workers who were able to manage their own workloads and offered flexibility at work were often more successful in their return to work (Coole, Watson, & Drummond, 2010). Workers have used different techniques in attempting to remain at work, such as cognitive and behavioral strategies to reduce WMSD pain while working (Öztug & Cowie, 2011).

The social organization of workplace environments is predominantly based on assumptions of the “working body” as an “able body” (Moss & Dyck, 2001), and although we cannot overtly discriminate against workers on the basis of disabilities, we have a long way to go to truly accommodate injured or disabled workers at the workplace. Workplace cultures providing levels of support and degrees of flexibility at the workplace have been found to determine a disabled worker’s successful integration into the workforce (Coole et al., 2010; Grayson, Dale, Bohr, Wolf, & Evanoff, 2005; Schur, Kruse, & Blanck, 2005).

Many individuals consider work to be a major part of their identity, and even those with injuries want to remain at work; however, consensus is that contextual factors can facilitate or impede a worker’s ability to remain at work after developing a WMSD (MacEachen et al., 2006; Svajger & Winding, 2009). Workers who faced family role disruptions and activity limitations because of this condition found it difficult to maintain a balance between home, social, and work activities (Beardwood et al., 2005). Workers who valued their work and were willing to change behaviors, such as making adjustments and seeking support, were often more successful (Alnaser, 2009; de Vries et al., 2011). The purpose of our research was to understand workers’ perspectives on how they managed to work after they developed a WMSD. We wanted to better understand the processes and strategies they used in how they responded to this condition and how they managed to maintain their working role.

Methods

According to Morse (2012), “Researchers use qualitative inquiry to elicit emotions and perspectives, beliefs and values, and actions and behaviors for the purpose of understanding the participants’ responses to health and illness, the meanings they construct about the experience, and their subsequent actions” (p. 147). We decided to use a qualitative methodological approach, specifically, grounded theory, because we wanted to understand how individuals respond to developing an illness condition—particularly a WMSD—in the workplace and are able to remain in that setting. Grounded theory was first developed as a systematic way of generating theory from data collected in a particular substantive area (Glaser &

Strauss, 1967). Through the use of grounded theory techniques for data collection and analysis, we developed a theory based on workers' experiences. Theories developed using this methodology provide a detailed and accurate explanation of the process being investigated and sufficient variation so that the theory can then be explanatory in a wide variety of contexts (Strauss & Corbin, 1998).

In grounded theory, theoretical sampling is not based on a predetermined number of subjects. It is based on theoretical concerns such as saturation, to enable theory development. Theoretical saturation can be defined as the point when researchers believe that "the properties and dimensions of the concepts and conceptual relationships selected to render the target event are fully described and that they have captured its complexity and variation" (Sandelowski, 2008, p. 876). This happens during the interpretation of the data, when researchers are satisfied that the theory is an accurate interpretation of the process they are attempting to understand and describe. In our study, theoretical saturation was found at the end of 25 interviews, when we were confident about our theory and model construction and determined that the addition of new informants would only confirm our findings rather than change the stages of our theory.

In qualitative research, establishing validity and reliability of the data involves trustworthiness that is achieved when the findings accurately represent the experience of the study participants (Speziale & Carpenter, 2007). There are a number of areas to evaluate when judging to what extent the substantive theory has explanatory power about the particular group or population studied. To establish trustworthiness of this grounded theory study, we followed the criteria for evaluating the research process and findings outlined by Strauss and Corbin (1998). We presented our preliminary findings at local and international research conferences where our findings, theory, and model were discussed and confirmed by researchers with expertise in the field and attendees who had developed this disorder and were attempting to remain working.

Participants

We invited participants from various workplaces to participate in the study. We began recruitment with a number of individuals from an occupational health and safety clinic that assisted individuals with WMSDs, moved recruitment to an office setting, and finally recruited from a food-processing plant that reportedly employed a number of individuals who had developed WMSDs because of the nature of the work performed in that workplace. This recruitment strategy helped to ensure variation in the data because of the different types of work and work organizations represented in the research. The workers recruited from the first two settings were performing primarily office-related duties that included using a computer, filing, writing, preparing presentations, and using the telephone. The participants from the food-processing plant took part in a variety of work processes that included butchering, packing, hanging, sorting, and cutting.

The participants included 16 men and 9 women ranging in ages from 25 to 55 years, having a self-reported WMSD, and were currently working. The participants had been working in their current jobs between 5 and 24 years (average = 10 years). Of these 25 workers, 17 reported that they had been told by a health professional they had a WMSD. Of the remaining 8 workers, 4 had been told by a physician that they had "soft tissue injuries," 3 had not received a specific diagnosis or label for the condition, and 1 had been injured on the job as well as having developed a WMSD. All participants met the criteria for a WMSD, which included (a) having a physical sign of the disorder (i.e., loss of motion, swelling, or deformity); (b) experiencing one or more subjective symptoms (i.e., numbness, pain, or stiffness); (c) acting on the condition by seeking medical help; (d) self-medicating; or (e) requesting or having work modifications because of the condition (Sanders, 1997). All participants reported deciding to remain at work after they developed the WMSD.

Data Collection

Data collection was through interviews. At the beginning of the study, we used semistructured questions for the interviews: Please tell us all you can about this problem, beginning with when you first noticed something was wrong. What treatments did you seek and what seemed to make it better or worse? How do you manage this condition at work? How has having this condition affected you outside of the workplace? As the study progressed, we used more focused questions: What were the reactions from coworkers, supervisors, and others at work? What would you say to someone who is at risk for this condition? Do you have any suggestions for workers or employers in dealing with this condition at work? Interviews were audiorecorded and immediately transcribed. Each interview lasted approximately 1 hour.

Data Analysis

A constant comparative method of data analysis is used in grounded theory whereby data are collected, coded, and analyzed simultaneously, beginning with the first interview data through to completion (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Data analysis began as soon as each interview was completed and transcribed. We examined the data word by word and line by line. Each transcript was coded by writing substantive codes in the margins of the transcript using open coding. The codes were then sorted into categories to capture the repeated patterns of behaviors that were emerging. We organized the data into more discrete categories and formulated these into the developing theory. During data analysis, we noticed that there were similarities in what the participants were saying and we wrote memos in the margins of the transcripts to that effect. Finally, when categories appeared to meet the criteria for theoretical saturation, we mapped the relationships using diagrams and formed our theoretical model. This process of integrating and refining the theory occurred through selective coding and in the identification of the core category, constant negotiating—the central theme to which all the categories were related.

The process model was continually redesigned until the theory and final model described the processes and strategies in which these injured workers engaged while remaining at the workplace. The literature forms an important part of theory development using both inductive and deductive reasoning (Glaser & Strauss, 1967; Strauss & Corbin, 1998); therefore, we returned to the literature to see if any studies had been conducted on negotiation and coping with illness or disability in the workplace, and compared our findings with that research.

Ethical Considerations

We received ethics approval for this study from the Office of the Human Investigation Committee (HIC) of Memorial University, St. John's, Newfoundland and Labrador. Each participant provided written informed consent before being interviewed. Confidentiality was ensured by using numeric codes to identify participants, and all identifiers were removed during transcription of the audio recordings.

Results

The Theory and Model

In this study, individuals who had developed a WMSD and were able to remain working were found to engage in a complex and dynamic process through which they negotiated their illness in occupational, health, and social contexts. The theory that was developed is identified as constant negotiating—managing WMSDs while remaining at the workplace (see Figure 1). There were five main phases and various subphases within each phase: (a) becoming concerned (noticing lingering symptoms, linking symptoms to work, realizing a need to act); (b) getting medical help (seeking a diagnosis, looking for treatments that work, learning more about WMSDs); (c) dealing with the workplace (finding support, weighing the pros and cons, dealing with credibility, gaining control); (d) making adjustments to lifestyle (coping with flare-ups, recognizing limits, making choices); and (e) taking charge (being watchful, initiating changes, getting the message out).

We found there was variation within each of the phases and subphases, and this was captured in the findings. Most of the variation was noted in the second, third, and fourth phases of the process, when workers were actively engaged in getting medical help, dealing with the workplace, and making adjustments to lifestyle. This process was not a linear one because workers often moved back and forth between phases when challenges arose and they found they needed to renegotiate between health, occupational, and social contexts. Workers used the negotiation strategies identified to manage their condition while remaining at work.

Core Category: Constant Negotiation

The core category central to the process was constant negotiating. The verb "to negotiate" or noun "negotiation" has a number of similar meanings that suitably captured some of the social psychological processes these injured workers engaged in while they continued to work after they developed WMSDs. Some meanings of negotiation include "discuss, consult together and try to reach a compromise or an agreement, arbitrate, moderate, come to terms, conciliate, bargain, haggle, thrash out, or work out" (Hanks, 2000, p. 644). The various meanings of negotiation were evidenced in our workers' descriptions of actions and behaviors that they used to manage their WMSDs.

Phase 1: Becoming Concerned

The beginning of the process for the workers was when they became concerned that they were dealing with something other than intermittent aches and pains at work. They became concerned about recurring and episodic symptoms of WMSDs, and negotiation took the form described as "working something out." They were beginning to understand the need for negotiation. Inner negotiation or self-talk occurred while workers were attempting to figure out what was happening to their body, and how this related to their work. They began suspecting something was wrong because symptoms that normally resolved still remained after rest or attempting various forms of self-treatment. They started to link their symptoms to work activities, realizing they needed to look for outside help because the condition was affecting both work and social aspects of their life. During this

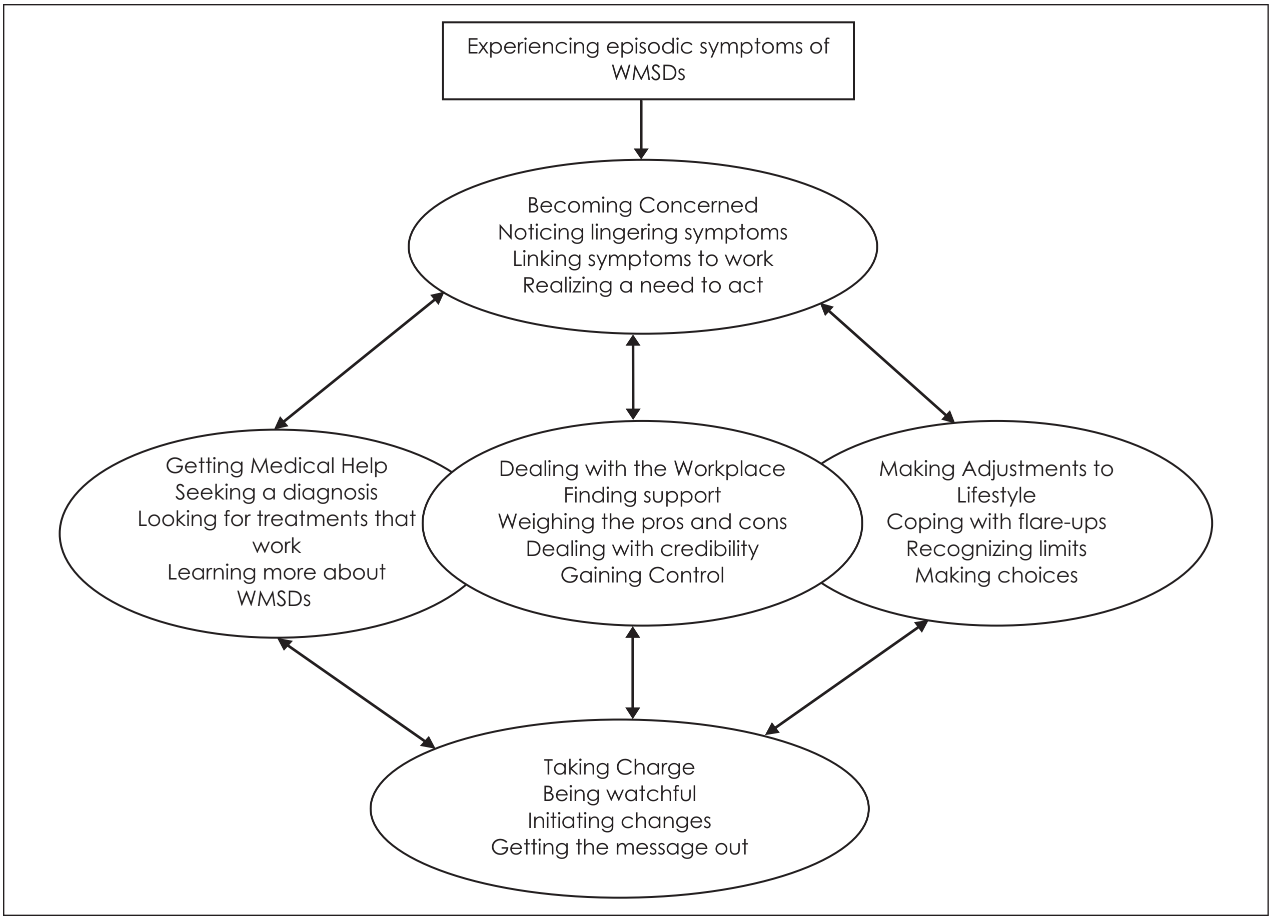

Figure 1. Process model of constant negotiating: Managing work-related musculoskeletal disorders (WMSDs) while remaining at the workplace.

phase of the process, they were discovering what they needed to do to manage the condition and remain working. The subphases included (a) noticing lingering symptoms, (b) linking symptoms to work, and (c) realizing a need to act.

Noticing lingering symptoms. Workers were noticing changes in both the quality and quantity of their symptoms, which were not resolving completely. They reported symptoms of tightness, swelling, tingling, stiffness, numbness, redness, feeling pins and needles, burning, and weakness. Some described their symptoms as shooting or sharp pain associated with activities and movement; others expressed feelings of soreness, burning, and nagging, severe, or aching pain. They were uncertain when the problems started because of the episodic nature of the symptoms. Some estimated a short time frame when symptoms began yet others considered it to be a longstanding problem: "I probably became aware that something was not quite right about two or three years ago. There was a different feeling . . . worse on my left [hand]. I sort of didn't pay a lot of attention to it." Early symptoms seemed to be eased by rest and by avoiding certain activities. Workers had engaged in self-treatments such as applying ice or heat, taking over-the-counter medications, and elevating their limbs. Symptoms caused distress when they started interfering with work and other activities. This was described as a "crisis point":

> It had become really bad. I could hardly turn my neck at all. That was, I think, a crisis point in the whole thing. I can't do work. I'm in pain. I'm short [-tempered]. I'm pretty cranky with people. I'm not happy about it.

Symptoms seemed to worsen at night, predominately after a working day, and either prevented them from falling asleep or would wake them during the night. Workers tried to normalize or dismiss the symptoms, attributing them to the aging process. At this point, they discovered that certain aspects of their work were contributing to symptom development and they began to link their symptoms to work activities.

Linking symptoms to work. Information displayed at the workplace played a role in providing information about WMSDs, and workers began to worry about how work activities were contributing to their symptoms:

> So you don't necessarily do what you need to do [about the problem] because, I think, it is a longer-term problem, but then you start to wonder, is there anything else wrong? Is it just because I'm doing this type of activity and this is what's causing the problem? Or you wonder, is it [the activity] doing any damage?

Whether it was being aware of information, recognizing the same problems in others, noticing the patterns of symptoms related to work activities, or a combination of factors, workers made connections between the condition and work activities. Their work tasks involved repetitive activities such as (a) constant pushing, pulling, reaching, and standing or sitting for long periods of time, and (b) constantly using fine motor skills while attempting to keep up with fast-paced, demanding work environments. They referred to their work as being "injury prone":

> All the work here is repetitive. You're stuck in one spot for eight hours, standing in one spot, not moving. You've got some soreness at the end of the day and it takes its course from there. Continuous motion, the [processing] line is so fast out there, and you're trying to keep up, trying to keep pace.

Realizing a need to act. It was not that workers had not sought help on their own, but rather that their forms of self-treatment—such as exercising, applying heat or ice, and taking over-the-counter medications—were no longer effective: "It really didn't get better . . . it never went away completely . . . that's when I realized something was not really right. . . . I can't sort of fix it myself anymore. There's nothing more I can do." Workers realized that if they were going to negotiate by consulting with others or even help themselves through inner negotiations they would need to take some sort of action. This usually happened when symptoms were interfering with other daily activities:

> I couldn't move my hands much—couldn't grip. There were lots of things I couldn't do; for example, driving. I couldn't grip the wheel and I had to use my fingers for driving. I didn't know where my hands were because I had no sensation.

By this time workers had either used up most of their own resources or their usual means of dealing with their problem had never been or were no longer effective. It was around this point in the process when workers left the first phase of inner negotiation and entered the second phase of the process, looking for help in the health care system, where they attempted to negotiate the help they needed to manage the condition and remain working.

Phase 2: Getting Medical Help

The type of negotiation that took place in the second phase often took the form of "consultation" as they sought advice from physicians and other health care providers about the condition. This was not always a collaborative relationship, and in those cases the negotiation was better described as "coming to terms," when workers simply accepted their diagnosis and treatments provided to them, or reached a deal whereby both parties contributed to acceptable treatments. In this phase, workers sought medical assistance and negotiated with others in finding the assistance they needed to manage their WMSD to remain working. This phase included three subphases: (a) seeking a diagnosis, (b) looking for treatments that work, and (c) learning more about WMSDs.

Seeking a diagnosis. Workers looked primarily to their general practitioner or family physician for a diagnosis. They presented with multiple subjective symptoms, and diagnostic tests were often inconclusive. There were long waiting lists to see specialists and receive diagnostics, surgery, or treatment. Some workers reported waiting 6 or 8 months before seeing a specialist, and then having to wait another 6 months for surgery. The etiology of this condition resulted in frustrating negotiations between both affected workers and health care professionals:

> The doctor always treated it as a discrete new injury. Physicians need to localize it not just in the area of the body but in time. There are those acute episodes, but there are those problems that are occurring longer-term.

Workers were concerned that some physicians seemed more focused on the paperwork involved in reporting work injuries than with workers' concerns. They would rather physicians spent more time explaining the diagnosis and how it affected the worker:

> But you know the first thing that happens when you go to a doctor with a workplace injury, they ask, "Is this Workers' [Workers' Health and Safety Compensation Commission]?" And then they get all caught up in that and not on the person who is injured, not at all. I definitely need a new doctor who is going to tell me what I want to know. It is my body, after all.

Negotiations in getting a diagnosis involved a long and difficult journey of bargaining efforts for many, whereas for others it appeared to be a simple consultation process:

> I went to see my family doctor and he prescribed an antiinflammatory and physiotherapy. The antiinflammatory definitely helps but physiotherapy has not really started, not the treatment. I went and had an assessment, but he never said what was wrong. . . . The doctor said I had soft tissue injuries and he told me to do neck exercises. I had many questions to ask. Something is going on here and I want to know: Why does this hurt?

Looking for treatments that work. Sufferers looked for treatments to alleviate their symptoms and hopefully resolve them. Multiple treatment options were offered, such as series of physiotherapy, massage, acupuncture, chiropractic sessions, and pharmaceuticals. Many said that the side effects of some of the medications were intolerable: "The doctor gave me Vioxx, Advil, Atasol30s at different times. I have taken so many medications that it was burning the stomach right out of me." Sometimes those who had undergone surgery were faced with relapse: "My surgery was not successful because I still have symptoms of carpal tunnel syndrome in both hands. I'm having the same problems as before: numbness, tightness in the wrists, and sharp pains." Workers found that using ergonomic equipment and orthopedic aides such as splints and special computer devices helped them. Exercising, stretching, and taking rest breaks were also found to be beneficial. Negotiations related to getting financial assistance for certain treatments were often challenging: "I used to go to massage therapy and that would help, but Workers' won't cover it and I can't do it until the doctor recommends it. You're not getting anything unless you have a doctor's note."

Learning more about WMSDs. Once workers had an idea of what was happening to them, they wanted to find out more information about WMSDs. Some information was available at worksites, on the Internet, or through coworkers, family, and friends. Workers talked to occupational health nurses and occupational health and safety workers at the worksite when available. Anxiety and fear arose when they learned more about the condition: "What is really scary is that I have seen pictures about good hands and bad hands and know what a problem that bad hands can be." There was an overlap between the phases of getting medical help and dealing with the workplace, because workers found it necessary to move between health care and the workplace in their negotiation efforts to manage the condition to remain working. Those who had been given diagnosis or treatment often required workplace support to receive ergonomic changes at their workstations. Dealing with the workplace involved four subphases: (a) finding support, (b) weighing the pros and cons, (c) dealing with credibility, and (d) gaining control.

Phase 3: Dealing With the Workplace

In the third phase different styles of negotiation were evidenced, and this variation was explained by two variables that included workplace support and how much control the workers felt they had over their situation at work. These types of negotiation ranged from no negotiation to open negotiation. Some workers were able to negotiate satisfactory relationships through "bargaining," whereas others were unable to negotiate, resulting in their feeling "victimized" at the workplace. At this time, they were deciding if they needed to report or disclose the condition at the workplace. There was much variation among workers related to the degree of disclosure that occurred, and who needed to be informed about the condition. Negotiation styles varied, depending on the amount of control the worker had over his or her situation and the amount of support the worker perceived in the workplace. In the first subphase, workers began negotiations to find support.

Finding support. Workers realized that they needed to negotiate and obtain whatever supports were available at the workplace. Some discovered it was difficult to negotiate support. They had brought in medical notes asking for accommodations and their forms had been lost or misplaced. Workers talked about managers who were supportive and others who were not. The on-site occupational health nurse helped in negotiations with managers. Workers had to decide whether or not they were required to inform or wished to inform a supervisor or manager about the condition. If they perceived their supervisors or managers to be unsupportive and could control their workplace environment, they would often decide not to report. Workers were challenged by the invisibility of their injuries: "There are some people who don't believe I have any problems and think I am using my shoulder as an excuse." They were discovering where their supports were: "I hit a brick wall at work. The administrator called me, yelling at me. The administrator has not been supportive."

Those workplaces with more flexible accommodation for injured workers seemed to be fairly supportive; however, challenges arose in workplaces where WMSDs were common. Finding suitable work to accommodate many workers was difficult for the employer. Seniority at the workplace was a barrier to negotiation efforts: "Down here seniority means everything. Everyone is worried about himself or herself. They don't care much. There are times you got to be really ready to fight." Those who were offered modified duties were often judged negatively by their coworkers: "Right now I'm on modified duties. The worst part is that people are complaining because I have this job. It's making my life miserable."

Issues related to compensation for workplace injuries challenged negotiation efforts:

> Workers' Compensation will basically harass you before they pay you. They'll make you go forever without money; that's why you'll find people who work injured. I'd have to be dead before I'd go off. . . . Workers' Compensation really gives you the run around so you have to be up on them. You have to know the difference between going off on a new claim and going off on a reoccurrence. . . . If you figure it is going to be a reoccurrence you tend to work in pain. I know people who have done that. I have done that.

Weighing the pros and cons. This was a subphase and a strategy that workers used to decide whether or not to report or disclose the condition at work. For some, the disadvantages of reporting outweighed the advantages; they would not report the condition at the workplace for financial reasons:

> The money issue is a big problem with people. They're afraid to be off because they're losing money, so they stay with the job, tolerate the pain on a daily basis until it gets to a situation where it's unbearable. I can't afford to be off . . . I was on Workers' before. It's financially hard. They don't make it easy for you. We were struggling to make ends meet. To go off you're going to be a month before you get the check, and that's if they approve it. If they don't, you could be waiting two months . . . then when you go back it is worse again because they starve you. They won't let you go back on eight hours right away.

Often, workers who chose not to disclose the condition at work had a number of other options available to them, such as having medical coverage through group insurance plans, having flexible time available to them, working alone, or being able to schedule their own work activities.

Dealing with credibility. Many times, workers showed no visible signs of the condition; as a result, credibility issues arose: "I know some of them don't think I am hurt because you don't see anything. There are people who really don't believe you." Affected workers were accused of being lazy, acting phony, or cheating the system "There is a lot of tension among your coworkers, and you see this when you have a problem. I know some of them think you're lazy, that you don't want to work." Administrators expressed doubts to them about workplace injuries in general: "The administrator told me that anybody on Workers' Compensation is a scammer. If there's not an arm hanging off you or if you're not limping or coming in on crutches, you're a scammer."

Gaining control. A need to gain control of the condition if they were to remain working after they developed the WMSD was evidenced. Negotiation efforts in gaining control would depend on whether workers felt in control of the situation at work and the amount of support they perceived therein:

> I'm taking control in my own hands as to how to take care of the problem. If I see pain or I see a little bit of stiffness in the hands, I'll subside. I'll take care of the matter myself. I know how far I can go with it. I get signals. You take the ball in your own hands. You have to speak up and express your concerns. It's your life.

For some workers, controlling particular aspects of work were important: "Some things you have control over. If you use a knife you look after your knife and make sure it is good to work with." Many believed they had been treated unfairly as a worker affected by the condition: "I feel like walking. It's all about money for the company. They're worried about how much they have to pay for Workers', the high premiums. It's unfair to penalize workers. They don't care." Figure 2 illustrates the various strategies workers used to negotiate and gain control in dealing with WMSDs in the workplace.

Workers who did not feel in control of the situation at work and perceived negative support could not and did not negotiate. They considered themselves victims of circumstance and left responsibility of care to others (see Figure 2, Cell A): "I really don't think they treated me very well. I think they wrote me off. It's the responsibility of Workers' to take care of the injured." Workers who felt in control of their situation at work and perceived positive support would openly negotiate and became partners in negotiation (see Figure 2, Cell D): "There are just two people in this department, and we decide between ourselves who will do what." Workers who felt in control but perceived negative workplace support used hidden negotiation by seeking help on their own and feeling isolated at the workplace (see Figure 2, Cell B): "I went into self mode and figured out what I needed to do for myself. I'm going to be steadfast now and won't be pressured into things that hurt me." Workers who felt less in control but perceived positive support had limited room for negotiation and would do as suggested, feeling dependent (see Figure 2, Cell C):

> They try and accommodate workers but there are just so many who have problems it is hard to do. . . . If the work I have to do involves certain lifting, constantly bending over, just standing, then chances are I'm going to be in pain.

The next phase in the process overlapped the third phase when workers affected by a WMSD needed to manage the condition not only in the work context but also in social contexts with family and friends. Workers began negotiating with family members and friends by

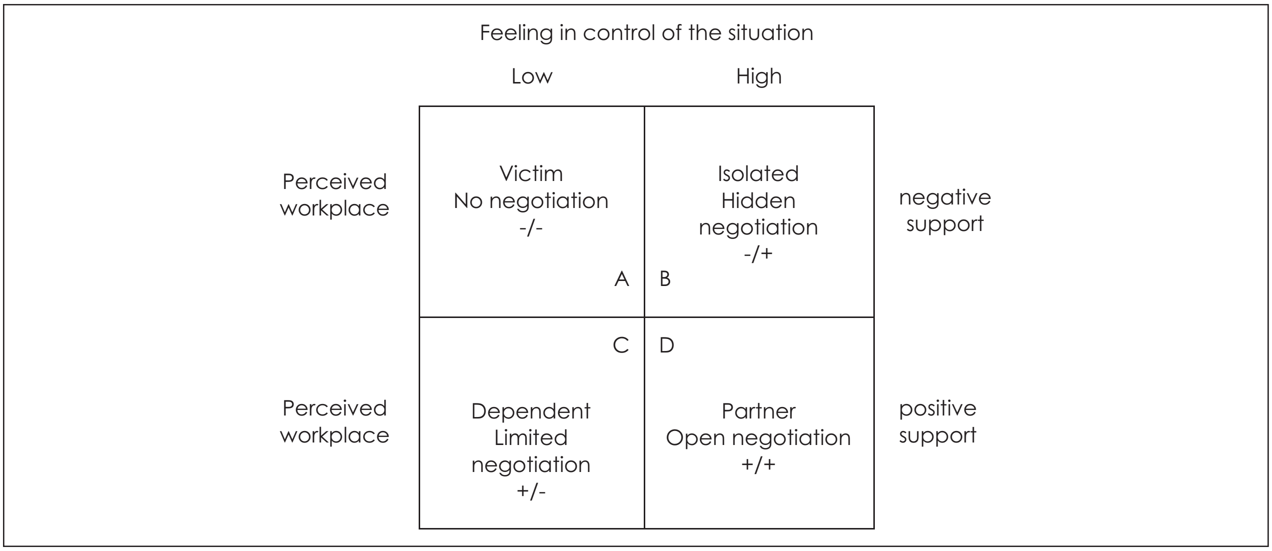

Figure 2. Negotiation strategies in gaining control.
Cell A –/–: feels like a victim – cannot negotiate – does not negotiate and continues as best as he or she can
Cell B –/+: feels isolated – often uses hidden negotiation or seeks help on his/her own
Cell C +/–: feels dependent – limited room to negotiate, so does as suggested
Cell D +/+: feels like a partner – open negotiation at workplace

making adjustments to lifestyle that included three subphases: (a) coping with flare-ups, (b) recognizing limits, and (c) making choices.

Phase 4: Making Adjustments to Lifestyle

In the fourth phase, negotiation was partially on the basis of "working something out," but also in "coming to terms" with the condition and "reaching an agreement or compromise" within themselves and among others, such as coworkers, families, and friends. Coming to terms often involved making difficult choices between work activities and desired recreational activities. At times, they reached a compromise by making trade-offs.

Coping with flare-ups. WMSDs were marked by episodic flare-ups, when symptoms sometimes seemed unbearable. It was during these times that workers negotiated their activities: "I have flare-ups. Sometimes it's worse than other times; then I have to take it easier, and that's hard." Feelings of frustration and depression were expressed, especially by those who seemed to have constant exacerbations: "I was so tired because of constantly fighting with this. It's exhausting." Some workers were better able to cope with symptom flare-ups by learning what they needed to do to avoid them. They described how work took priority: "No hobbies. You're restricted to get yourself better and not make your injury worse than what it is."

Recognizing limits. Workers talked about how their family life was altered because of having to manage the condition and remain working: "It screws up your family life. I've changed my lifestyle to realize that I have limits now." They felt challenged in negotiating and recognizing limits: "I almost look at it as pushing the limit. How much I can get away with without making it worse or making it so that it's going to be hard for me to go to work." Older workers contemplated that the type of work they had chosen in early life might have contributed to the development of the condition, and felt that it limited them:

> When I came out of high school I was accepted for university. Then I had this relative and he told me he could get me a job down here. I was just out of high school and offered ten dollars an hour. How could I turn that down? All I could see was the money. I could get a car! Now I feel like I'm trapped, stuck.

Younger workers expressed limitations in negotiating career prospects: "Sometimes I'm angry and a little depressed. I'm only twenty-five years old, and if I keep working here I won't be able to do what I want to do. I know my life is altered because of my injury." Workers expressed discouragement as they negotiated the condition to remain working:

> Sometimes I go home. I feel discouraged because it's bothering me and I feel a bit cranky. Pain has a way of occupying you, making you think about it, and how to get rid

> of it. It has affected me outside of work. If [only] you didn't have to take the pain home with you.

Making choices. It often came down to workers making choices and identifying activities that decreased symptom flare-ups. They would choose to avoid activities that caused problems for them at work. They negotiated limitations the condition placed on them: "I can't do as much as before. I constantly have to think about how what I'm doing at home may affect me [at work]." Workers chose to pursue hobbies and sports on the weekends or periods off work to avoid interfering with work. They negotiated the activities that affected the condition and weighed the options:

> I play ball hockey. I get sore sometimes but I want to do this. You can't stop everything you do. I tolerate it because I want to play hockey. Sometimes, after a game I really pay for it. This one weekend we had a game and I had to take Monday off; it was that bad. The next day was hell.

Negotiation strategies were many and varied as workers discovered the ways and means of managing the WMSD to remain working. Most in this study achieved the final stage in the process; that is, taking charge. There were three subphases in the fifth phase of the process, which included (a) being watchful, (b) initiating changes, and (c) getting the message out.

Phase 5: Taking Charge

The final phase represented those who could successfully negotiate and better manage their WMSD while remaining at work. Those who took charge exhibited effective inner negotiation skills in monitoring the condition to avoid exacerbations. They also were successful in negotiating with others in initiating changes at work and providing information to other workers at risk.

Being watchful. Workers had begun to monitor the way work activities affected the condition in attempts to avoid exacerbations. Pacing, developing awareness, engaging in job rotation, changing positions, and monitoring work tasks were coping strategies that workers used:

> I have been watching myself more. Now I watch what I do, how I feel. I know there is a domino effect to injuries, so I try to avoid that. I have found I have to pace myself. . . . You need to control the pace and watch what you're doing. I like to rotate and move around; it really helps at this job.

Workers self-negotiated by monitoring activities that caused difficulty: "The trick is if I do something, not to do it for too long. I try to be aware of how my hand is, notice if problems are occurring."

Initiating changes. Workers negotiated among themselves, with coworkers, and others by initiating changes at work to avoid problems: "I've tried to become more aware of how I sit at the computer. I try not to sit at the computer too long, do other types of activities, take a break, and try to vary the day." Some changed job tasks with others if they were trained in multiple roles. Other workers attempted to find alternate ways of doing work: "I've learned to do things differently. . . . There are ways I can make myself more comfortable. . . . What I do is modify [work tasks] myself."

Getting the message out. In this last subphase of the process, workers discussed the importance of getting the message out and sharing their experiences. Advocating, educating, and training were stressed as part of getting the message out. Standing up and speaking out for workers' rights were the hallmarks of negotiation efforts in this phase: "I think workers need proper ergonomic assessments right from the start. In the long term they [employers] will save a lot of money because they're able to save their employees from getting WMSDs." Some had been offered ergonomic courses at their workplace and they talked about how these could be improved: "There are a couple of courses on ergonomics and they are helpful if people understand, but I would like it in layman's terms."

Discussion

In grounded theory the rigor of a study is determined by the fact that theory is well grounded in data (Strauss & Corbin, 1998). The data in this study provided sufficient variation and theoretical saturation to adequately address the challenges in achieving a rigorous theoretical model to explain the process of how workers dealt with WMSDs to remain working. Martin and Peterson (2009) suggested that theory and models are needed "to understand the nature of the construction of illness and to play a more proactive role in helping patients negotiate their way through the experience of having a chronic illness" (p. 579). To our knowledge, this is the first study that resulted in a theoretical model being developed that explains the negotiation strategies used by workers who had developed WMSDs to remain working.

We found that workers were required to be involved in intense and ongoing negotiation strategies in various contexts of their lives. Inner or self-negotiation occurred when workers wondered what was happening to their body, what the changes meant, and what the illness condition required of them. Negotiating in managing chronic illness and disability has been reported in previous literature (Audulv, Norbergh, Asplund, & Hörnsten, 2009; Charmaz, 1991; Crooks, Chouinard, & Wilton, 2008). It has been suggested that individuals contemplate patterns of illness, compare present to past selves, and develop an understanding of any impending threats to themselves through the use of inner dialogue and self-negotiations (Audulv et al.; Charmaz). These negotiations are aimed at creating understanding, finding identity, and attributing meaning to illness or disability (Crooks et al.)

Individuals in our study reflected on the causation of the illness condition, specifically, work-related tasks. Some blamed themselves, thought it inevitable because of the type of work they were involved in, or normalized it as part of aging. In developing an understanding of illness, other researchers have found that individuals engaged in the same responses that we identified (Hörnsten, Jutterström, Audulv, & Lundman, 2011). Through negotiations with health professionals, workers were able to obtain a specific diagnosis of the condition. Often workers in our study suspected something was wrong long before a diagnosis was sought or offered, which confirmed what others have found (Charmaz, 1991; Hörnsten et al.). Receiving a diagnosis facilitated additional negotiations when workers were able to label or name the condition, look for more information, and receive an intervention and treatments. Having a recognized label or medical diagnosis provided confirmation, legitimacy, and validation of their illness, which was noted in previous research (Martin & Peterson, 2009). Workers in our study proudly showed their surgical scars associated with carpal tunnel syndrome as proof of the condition, recognizing the legitimacy of their illness. In Charmaz's study, the lack of diagnosis or validation of illness shattered the trust of the sufferer and others.

We found that workers looked for and wanted a diagnostic label for their WMSD as a negotiation tool to avail themselves of supports and resources from insurance, compensation, and health services. Similarly, Crooks et al. (2008) found that if women affected by fibromyalgia accepted the label of being disabled, that facilitated their ability to negotiate changing relationships, entitlement of resources, supports, and services. Martin and Peterson (2009) also found that bargaining occurred among health practitioners and individuals regarding diagnostic labeling, especially if there were lifestyle implications that included work.

Most WMSDs are invisible or cannot easily be seen and, therefore, workers in our study had to decide whether or not they wanted to or in fact needed to disclose the condition. Charmaz (1991) found that people with invisible illnesses conceal them when they view them as something to be judged. Concealing an illness or disability helps to avoid stigma associated with the disclosure; however, keeping an illness hidden can also be troublesome (Charmaz). The workers in our study who were able to conceal their illness from their employers either had flexibility or control in work or received treatments paid for by health insurance, making symptoms more manageable at work. Others did not have the option to not disclose because they needed administrative support to obtain ergonomic equipment and health care services. Some workers who perceived that they did not have control or the supports necessary to successfully negotiate their illness experienced victimization. This is not surprising, because power in relationships has been found to be an influencing factor in negotiating chronic illness (Charmaz).

Participants in our study had to balance work and social activities to remain working after they developed a WMSD. Successful negotiators who managed the condition and remained working achieved this balance. Charmaz (1991) suggested that those suffering from chronic illness who wish to maintain their working role require an intricate juggling and pacing of activities, and those faced with unlimited demands and little or no control over activities find this difficult.

The results of our study are congruent with the theoretical model earlier developed by Karasek and Theorell in 1990. Their theory suggests that workers develop illness and injury when psychological demands of the job are high and the ability to make decisions is low. In our theoretical model, we saw these psychological demands and decision-making abilities continuing to influence how workers responded to injuries. In their model, Karasek and Theorell described four types of workers: (a) "isolated prisoner," describing a worker who experienced low decision latitude and low social support; (b) "obedient comrade," a worker who was identified by low decision latitude and high social support; (c) "cowboy hero," which described a worker with high decision latitude and low social support; and (d) "participatory leader," reflecting a worker with high decision latitude and high social support. Their findings can be compared to our negotiation strategies in gaining control (as represented in Figure 2). In our findings, we identified four negotiation strategies workers used that differed depending on whether the worker was feeling in control of the situation at work and whether or not he or she perceived positive or negative workplace support, that included (a) open negotiation (feeling like a partner), (b) limited negotiation (feeling dependent), (c) hidden negotiation (feeling isolated), and (d) no negotiation (feeling victimized).

Hörnsten et al. (2011) identified a turning point in chronic illness management when individuals with chronic illness conditions begin to view their illness in different ways. According to these researchers, reaching a turning point causes a person to look at strategies to self-manage their illness conditions and passing the turning point leads to better self-management of the conditions, whereas being unable to pass the turning point results in feelings of helplessness and a decreased ability to self-manage. We found in our study that workers passed through various phases of negotiation in attempting to self-manage a WMSD and remain working. In self-managing the illness condition at work, they found that control and support affected their ability to negotiate the WMSD to remain working. Self-management decisions are not one-time decisions but rather are decisions made on a continual basis (Audulv et al., 2009; Charmaz, 1991) and adapted to the situation (Alnaser, 2009). We found that workers affected by a WMSD were continually reevaluating and renegotiating to better self-manage the illness condition to remain working.

Implications

Our findings have implications for health care, workplaces, education, and research to assist workers affected by WMSDs to remain working safely if they choose to do so. Our theoretical model does not focus solely on the workplace or the characteristics of work, but also takes into account other contextual factors such as health care and society. Societal factors include not only family and friends, but also institutions such as government, education, business, and health. The interconnectedness and the blurring of boundaries between health, occupational, and social environments is encouraged by this theoretical model. There is a need for collaboration among workers, employers, health care providers, societal members, and policy makers. Communication and negotiation strategies for affected workers can be enhanced by information sharing among key players in these various sectors. This theoretical model also conceptualizes the environmental factors surrounding individuals who have developed this condition.

Implications for Health Care

With the increased cost of today's health care, society is placing the responsibility of health care matters on the individual and encouraging healthy behaviors to reduce increasing costs to an already overburdened health care system. Although this is a beneficial response, care must be taken not to place blame on victims who face workplace hazards and stressors, or to encourage them to work under unsafe or hazardous conditions. It is rather a shared burden of responsibility between the individual and workplace management to develop health initiatives to promote workers' health and lessen costs related to health care services. Perceptions also matter. Individuals' perceptions of the environment can either assist or burden them in their ability to control factors at work. They must be encouraged to be active participants in developing health policies and procedures at work, and not simply passive recipients whose opinions (they believe) do not matter.

There are three levels of workplace interventions, including primary, secondary, and tertiary prevention. Nurses and other individuals with responsibilities for workplace health and safety are in a pivotal role to provide prevention strategies at all three levels. Primary prevention measures that are taken before a WMSD develops include (a) identifying situations that cause or contribute to the development of WMSDs and improving these situations; (b) distributing educational materials for those who are at risk for developing a WMSD; and (c) providing early ergonomic assessments. Secondary prevention measures implemented to assist with early diagnosis and treatment include (a) early diagnosis of a WMSD-related injury to reduce its progression; (b) developing partnerships between managers and workers so that problems are addressed when they arise; (c) providing workers opportunities to control their work tasks; and (d) ensuring that workers take regular breaks and alternate work activities during the day. Tertiary prevention efforts aimed at minimizing the effects of injury or disability once the injuries have occurred include (a) advocating for injured workers; (b) providing opportunities for workers with a WMSD to discuss health concerns and issues as they arise with health professionals, managers, and insurers; and (c) offering support to injured workers.

Implications for Workplaces

The findings illustrate that an integrative approach to managing workers affected by WMSDs is necessary. Workers affected by this condition who have developed successful management strategies to remain working can be consulted and information shared among those affected, including managers and coworkers. Communication can be facilitated in a bottom–up approach, in which injured workers lead discussion groups and share experiences, rather than a top–down approach in which managers lead discussions. Workplace administrators need to create a safe culture where workers are safe and comfortable in reporting illnesses, injuries, and disabilities, arriving at mutually beneficial solutions. Workers and employers are encouraged to think upstream about the factors that contribute to WMSDs to develop strategies to prevent them from occurring. Ergonomics must be seen to be an investment in worker health so that costs from injuries and disabilities because of poor ergonomics can be reduced. The theoretical model that was developed from these findings requires workers to play an active part in developing negotiation strategies to remain working and prevent greater injury should they develop a WMSD.

Implications for Education

Our theoretical model illustrates how workers gain knowledge and information about WMSDs as they move throughout the process of negotiations to successfully manage their condition and continue working. Employers can offer educational seminars about WMSDs and their development to increase workplace support and workers' perceived control. It is important to advance professional health care education in chronic disease management. Basic and postbasic health professional programs could contain occupational health in the core curriculum to include (a) health promotion and workplace wellness programs; (b) workplace health and safety law, insurance, and policy development; (c) leadership development, risk appraisal, and control; (d) chronic disease management and disability in the workplace; (e) occupational toxicology and disease; and (f) ergonomic training. The theoretical model that was developed from these findings can be used as a teaching guide for health care professionals in understanding how workers negotiate chronic illnesses such as WMSDs to remain working.

Implications for Research

A challenge in research is to invite dialogue, critique, and testing from other researchers to improve and refine models developed from findings. Additional research as a result of this study would include theoretical testing of the concepts and the relationships between the various contexts to validate or build on the theoretical model that was developed from these findings. An additional study might be conducted to determine when different negotiation skills are most effective, depending on the context in which they are used. Researchers might be interested in developing an intervention study to introduce and teach negotiation and self-management strategies to workers affected by chronic illness conditions, including WMSDs.

Conclusion

Workers who are able to remain at work when they have developed a WMSD do so as a result of a dynamic balance of negotiation strategies used among employers, coworkers, health care providers, family, and friends. Responsibility to manage such a condition must be considered a shared responsibility. Increasing capacity for injured workers to gain control and support to manage this chronic condition is very important, and we must not underestimate the impact that workplace administrators and others have on workers' ability to gain control of their situation to remain working. Building a safe and supportive environment for injured workers is essential if we want to ensure that they can safely remain in the workplace. Allowing for some flexibility, control over work tasks, and providing encouragement and support make a huge difference in creating an environment where injured workers feel valued and appreciated and able to successfully continue working.

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