

RESEARCH PAPER

## Managing pain in the workplace: a focus group study of challenges, strategies and what matters most to workers with low back pain

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### Abstract

**Purpose.** Most working adults with low back pain (LBP) continue to work despite pain, but few studies have assessed self-management strategies in this at-work population. The purpose of this study was to identify workplace challenges and self-management strategies reported by workers remaining at work despite recurrent or persistent LBP, to be used as a framework for the development of a workplace group intervention to prevent back disability.

**Method.** Workers with LBP ( $n = 38$ ) participated in five focus groups, and audio recordings of sessions were analysed to assemble lists of common challenges and coping strategies. A separate analysis provided a general categorisation of major themes.

**Results.** Workplace pain challenges fell within four domains: activity interference, negative self-perceptions, interpersonal challenges and inflexibility of work. Self-management strategies consisted of modifying work activities and routines, reducing pain symptoms, using cognitive strategies and communicating pain effectively. Theme extraction identified six predominant themes: knowing your work setting, talking about pain, being prepared for a bad day, thoughts and emotions, keeping moving and finding leeway.

**Conclusions.** To retain workers with LBP, this qualitative investigation suggests future intervention efforts should focus on worker communication and cognitions related to pain, pacing of work and employer efforts to provide leeway for altered job routines.

**Keywords:** Low back pain, workplace, self-management, qualitative, focus groups

### Introduction

Workplace factors are important predictors of rehabilitation and disability outcomes of musculoskeletal disorders, encompassing both physical and psychosocial domains [1–3]. This evidence has led to workplace policies and intervention strategies intended to facilitate return to work by simulating job tasks, providing temporary job modification, improving workplace support or identifying and addressing specific workplace concerns [4,5]. The majority of research in this area has focussed on workers with long-term sickness absence, injury compensation

claims and physician-ordered job restrictions. However, most workers who experience recurrent musculoskeletal pain and discomfort are able to continue working with minimal time loss [6–8], presumably with the help of informal workplace adjustments, communication and employer leeway. Few studies have investigated coping strategies and employer support in this working population.

Low back pain (LBP) ranks among the most common chronic health conditions that cause work limitations, surpassed only by depression and arthritis [9]. Among those recovered from an acute episode of work-related LBP, the 1-year rate of recurrence of

symptoms is 50–60%, and recurring work disability occurs in 12–15% of cases [10,11]. Recurrent LBP can interfere with occupational function by limiting physical capacity, increasing fatigue, reducing productivity, straining relationships with peers and supervisors and creating a need to alter or modify job tasks to reduce discomfort [10,12–14]. While experiencing temporary functional impairment and discomfort, most working-age adults with persistent or recurrent LBP continue to work full-time in the absence of formal job accommodations or physician-ordered restrictions [15,16]. Thus, pain self-management strategies of workers may play an important role in overcoming functional limitations of LBP and preventing occupational disability [17,18].

Chronic pain self-management interventions have been successful in reducing the experience of pain, functional limitation and distress in patient groups [19,20]; one of the earliest and best-known examples is the Stanford Chronic Disease Self-Management approach [21,22]. Self-management interventions apply psycho-educational techniques borrowed from cognitive-behavioural therapy to enhance self-efficacy and coping skills and provide individualised plans for problem-solving and dealing with temporary setbacks [23,24]. Although reductions in perceived disability have been reported as an ancillary benefit of several self-management interventions for chronic pain and illness [25–27], no interventions have been specifically designed to address pain-related concerns in the workplace setting.

Understanding how most workers are able to continue working despite pain may shape future rehabilitation strategies and guide employer policies to allow or facilitate pain self-management in the workplace. It is possible that the principles of chronic pain self-management might be adapted to fit workplace concerns, but this approach has not been tested. To inform the development of a group self-management intervention programme, the authors conducted a series of focus groups. The purpose of the focus groups was to identify workplace challenges and strategies reported by workers remaining at work despite recurrent or persistent LBP. The overarching goal was to determine whether principles of pain self-management might provide an appropriate framework for the development of a workplace group intervention to prevent back disability.

## Methods

### *Participants*

Study participants ( $N=38$ ) were full- or part-time workers ( $\geq 20$  h/week), ages 18–65, with episodic or

recurrent LBP that sometimes interfered with work activities. In addition, eligibility required that workers be presently working and experiencing LBP symptoms some time within the prior 12 months. We made no effort to require further information of diagnoses or symptoms because this was not necessary for the purposes of the study. Because of the formative and qualitative nature of our research, we chose to include workers from a variety of workplaces. Participants could vary with regard to past work absences due to LBP, but volunteers were excluded if they had a history of back surgery, were currently out of work or had medical restrictions at work, or if they had another serious disabling medical condition. Among eligible participants, selections were made to maximise diversity of job types, age and gender in each group. Recruitment of participants was by local newspaper (Middlesex Daily News) and internet (Craig's list) advertisements asking full- or part-time workers with LBP (ages 18–65) to call if they were interested in participating in a small discussion group about managing LBP in the workplace.

### *Procedures*

Five focus groups were held in January and February 2009. Focus groups as opposed to individual interviews were chosen to benefit from group dynamics. The 'sharing and comparing' done in focus groups would be more consistent with the nature of a workplace pain problem [28]. One group included only office workers, one included workers with manual work either in a traditional blue-collar setting or in health and service work and two groups were comprised of mixed occupations. A fifth group consisted of self-employed workers. Both homogeneous and mixed focus groups were included to observe any notable differences in the opinions of workers from various settings. A group of self-employed workers provided an opportunity to observe differences in self-management in the absence of any employer constraints.

After responding to the advertisement by e-mail or telephone, potential participants were screened for eligibility and availability in a follow-up telephone call. Focus groups were arranged to include six to nine participants according to recommendations for optimal group interaction [29]. All focus groups took place in the conference room of an office building in Massachusetts, USA; and all discussions were audio taped.

Before the focus groups started, researchers asked participants to read and sign a consent form informing them of their rights as participants in scientific research. The consent form provided

information about the goals of the study, assurance of researcher confidentiality and notification of a \$100 compensation for the time and travel expenses incurred by their participation.

All procedures for the focus groups were reviewed and approved by the institutional review boards for the Harvard School of Public Health (protocol No. P16839-101) and the Liberty Mutual Research Institute for Safety (protocol No. 08-01). The participants were informed of their rights as participants in scientific research according to the Helsinki declaration.

To provide a characterisation of those who volunteered, participants were asked to complete a brief questionnaire prior to the focus group; this included demographic information and measures of functional limitation, physical job demands and pain beliefs. The Quebec Back Disability scale [30] assessed current functional limitation due to LBP. It consists of 20 items about how LBP affects daily life and is scored on a 6-point likert scale from '0' (not difficult at all) to '5' (unable to do). The Work Limitation Questionnaire [31] assessed the perceived impact of LBP on job productivity. It consists of 16 items scored on a 6-point likert scale from '0' (difficult none of the time) to '4' (difficult all the time). The Physical Workload Survey [32] assessed physical job characteristics. This measure consists of seven items scored on a 6-point likert scale from '1' (not at all) to '6' (almost all of the time). The Fear-Avoidance Beliefs Questionnaire [33] assessed level of fear-avoidant beliefs. The FABQ consists of 16 items scored on a 7-point likert scale from '0' (completely disagree) to '6' (completely agree). Sum scores on all of the scales provided a basis for comparison to previous study populations.

Three of the authors (THT, WSS, YHH, two psychologists and one postdoctoral fellow with a background in health psychology) alternated as focus group facilitators, with at least two facilitators at each meeting. At the start of each focus group, one facilitator described the purpose of the discussion: to gather information about challenges of working with LBP and the strategies used to cope with these challenges. The facilitator also asked participants not to dwell on the causes of LBP or their experiences with various therapies or therapists, as this was beyond the scope of the intended research. The facilitator emphasised that there were no right or wrong answers, and the participants were encouraged to discuss points raised by others. The discussions lasted up to 2 h, with a 10-min midway break.

The four discussion topics introduced by the facilitator focussed on: (a) physical demands, (b) organizational challenges, (c) social and interpersonal challenges and (d) psychological well-being. Within each of these four topics, the facilitator asked participants to describe problems and challenges they

faced while trying to manage LBP at work, strategies they used to resolve these problems and how employers cooperated in these efforts (for exact wording, see Table I). These four topics were chosen based on earlier research by some of the authors [14]. The facilitator presented each discussion question one at a time, and the question was displayed on an overhead projection screen throughout the ensuing discussion. In addition to audio recording of sessions, the facilitator and at least one other member of the research team took detailed notes. Upon completion of each focus group, the facilitator paid participants and thanked them for their time and effort.

### Data analysis

All focus group discussions were audio-taped to aid in data analysis and thematic extraction. Using a constant comparative method guided by principles of the Grounded Theory approach [34], weekly meetings of the research team provided an opportunity to nominate, label and revise themes and categories emanating from each of the successive focus groups. This approach was used to discover and summarise concepts in the absence of an existing theoretical framework. Potential disagreements among investigators would be resolved through discussion and review of focus group audio tapes until a consensus could be achieved. Data analyses by the research team involved three tasks: (1) grouping and labelling workplace challenges associated with pain; (2) grouping and labelling descriptions of personal self-management strategies; (3) creating a conceptual map of the predominant themes to capture what mattered most to the workers. These three parallel tasks were conducted not only to provide a list of challenges and strategies that might be the focus of intervention, but also to capture the essence of workplace SM processes from the worker perspective to design future intervention components.

### Results

Of the 80 workers who volunteered, 55 met eligibility criteria. From this list, the researchers chose 40 persons who would provide the greatest diversity of age, gender and job type within each of the groups. Two invited workers did not attend their assigned focus groups due to sickness on the day of the meeting. The age range of attendees was from 23 to 66 years ( $M = 49$ ,  $SD = 11.7$ ) and 26 (68%) were female. Race of participants was White (non-Hispanic) (90%), Black (5%), American Indian/Alaskan Native (2.5%) and Multi-racial (2.5%). Highest educational levels were college degree

Table I. Focus group questions.

Topics	Focus group remarks/questions
Physical demands	Regardless of occupation, you experience some physical demands at your workplace. If you work in a factory, you may be required to stand for long periods of time or maybe do some heavy lifting; or if you work in an office, you may be required to sit at your desk all day.
Problems	Will you please identify what you find problematic and challenging about the physical demands in your workplace?
Strategies	Have you found any strategies that are helpful in dealing with these challenges?
Employer involvement	In which ways does your employer deal with these problems?
Organisational challenges	Some workers have told us that they experience organisational problems when they try to manage their low back pain in the workplace. Such challenges may be for instance not being able to take a break when you need to walk a little or stretch because breaks are only at fixed times, or not being allowed to use your favourite pillow in the back of your chair.
Problems	Will you please identify what organisational challenges you have in your workplace?
Strategies	Have you found any strategies that are helpful in dealing with this?
Employer involvement	In which ways does your employer deal with these challenges?
Social and interpersonal challenges	Now we will talk about how your colleagues deal with your low back pain.
Problems	Will you please tell us about the challenges you face in dealing with your co-workers?
Strategies	Have you found any helpful strategies?
Employer involvement	In which ways does your employer deal with the possible problems you may have with your co-workers because of your low back pain?
Psychological well-being	The last area for discussion today is your psychological well-being. What we mean by this is how you feel about having to tell your co-workers and supervisors about your back pain; and maybe having to ask them to help you with tasks that are difficult for you when your back pain is bad.
Problems	Will you please tell us if having to tell your co-workers or supervisors about your back pain makes you have negative feelings?
Strategies	Have you found any strategies to help you feel better about this?
Employer involvement	In which ways does your employer recognise these problems? Will your employer do anything to help you feel better about it?

(34%), some college (37%), high school diploma (18%) or less (11%).

Scores on the pain measures administered prior to focus group discussions indicated generally moderate to severe functional limitation and average physical work demands. Mean scores were 34.3 (SD = 17.5) on the Quebec Back Disability Scale, 16.4 (SD = 8.7) on the Work Limitations Questionnaire, 18.4 (SD = 5.0) on the Workplace Physical Demands measure, 15.8 (SD = 4.1) on activity-related fear avoidance beliefs and 15.9 (SD = 9.4) on work-related fear avoidance beliefs. Mean values on the measures were roughly similar to those of other chronic pain study populations.

### Workplace challenges

On the basis of the focus group discussions we identified four categories of workplace challenges: (1) activity interference, (2) negative self-perceptions, (3) interpersonal challenges and (4) inflexibility of work. These four categories of challenges were universal across all groups; all problems were raised in each focus group, but examples and discussions differed according to the type of work setting. For example, office workers complained of having to sit for long periods of time, whereas manual workers were more concerned about having

to sustain awkward positions. Pain fluctuated a great deal from day to day, and working through occasional pain flare-ups was a universal challenge.

*Activity interference.* The discussions on activity interference included difficulties with getting started in the morning because of waking stiffness and difficulties maintaining activity despite the confines of work and days with pain flare-ups. Confines could be time related, such as having a rigid time schedule, related to work position or they could be related to the leeway workers had for altering work to be more comfortable.

Pain interfered substantially with occupational demands, though participants were more likely to express pain interference in terms of its psychological impact (the frustration and annoyance of experiencing pain while trying to accomplish work demands) rather than in terms of lost work efficiency or productivity. No participants indicated reduced output or reduced pace as a result of pain, but many described the emotional challenge of *working through pain* or *keeping up appearances* to meet employer expectations. Thus, pain made it more difficult to work, but job activities were completed nonetheless.

*Negative self-perceptions.* Negative self-perceptions were universally expressed and were sometimes overlapping with problems outside of work. Some

workers had doubts of their own abilities and were feeling discouraged and distressed. They were concerned because the LBP persisted for years, although it seemed to be a temporary problem for other people, and they were concerned about using LBP as an excuse not to work. 'Why aren't I getting better? You know, am I just using this as an excuse? And I think that that causes depression and causes you to isolate yourself from others.' [Female, 57 years old, travel sales].

Others questioned their worth as an employee. 'So you don't wanna [sic] say anything in those cases cause [sic] you're afraid of losing your job. You just drag yourself through the day and keep popping aspirins.' [Female, 42 years old, shipper/receiver for a corporate mail centre]. Some participants were feeling stigmatised and embarrassed. 'Most of the time I keep it to myself cause I don't want people to say – oh, she is one of those BACK people, you know.' [Female, 54 years old, medical research assistant]. Advice from co-workers and employers was sometimes unwelcome; they interpreted this to mean they had done something wrong to get LBP.

*Interpersonal challenges.* One interpersonal challenge was lack of understanding among co-workers, especially because LBP was an invisible complaint. 'If you walk into work with your arm in a cast – oh, you've got a broken arm, oh gosh – you know . . . but when you start talking about – oh God, my back is bothering me – people dismiss it.' [Female, 62 years old, retail sales assistant]. Exhaustion was another challenge; sometimes they had no energy left for socialising with family and friends. 'I don't do much for family any more, visit friends, you know, calls for dinner. I've kinda [sic] given up on the social aspect of my life . . . I just go to work, that's it.' [Female, 61 years old, hairdresser]. Some were concerned about being irritable on days with much pain.

'I think if you are in pain it is hard to get along with anyone including yourself.' [Female, 65 years old, entertainer]. 'I am always getting counselled about my lack of patience, cause I get really cranky and evidently I don't have good customer service some days, but that's mostly when the back pain kicks in. I get very short with people. They have been counselling me for about 10 years on that one, it is always in the need to improve me category.' [Female, 42 years old, shipper/receiver for a corporate mail centre].

Younger participants were concerned that other workers perceived them as lazy ('*slackers*') if they requested lighter duty or help with job tasks. 'You know, I am young, I am 23 and people would go how bad can her back really be, she is 23?' [Female, 23 years old, 'registered client associate']. Older workers

reported less difficulty asking for help on strenuous or awkward tasks and often, their younger co-workers would volunteer assistance even without asking.

*Inflexibility of work.* Participants reported that LBP was easier to manage in workplaces with an existing reputation for looking after the welfare of employees (some participants referred to this as having a good *safety climate*). In these work environments, it was more readily acceptable for workers to alter the work methods to minimise physical effort and discomfort. Working in teams was considered an advantage. 'And I'll just call another worker and say would you come in to take it for [sic] my day, then I can do a day for you when you can't come in, so we work together like that.' [Female, 57 years old, home aide for seniors].

#### *Worker strategies*

On the basis of the focus group, we identified four categories of strategies: (1) altering work and leisure time activities and routines to get one's work done, (2) reducing pain symptoms, (3) using cognitive strategies and (4) communicating pain effectively. Each focus group identified strategies within all four categories. Many of these strategies addressed the problem of working through pain flare-ups and/or preventing them. Some specific ideas spanned multiple strategies or addressed multiple problem areas. For example, storing medication at the workplace was useful for pain relief (reducing symptoms), but also to improve one's sense of being prepared and having control over symptoms, at least well enough to get through a difficult day (a cognitive strategy).

*Altering work and leisure time activities.* Some workers had reorganised their morning rituals to alleviate morning stiffness. 'I run hot water when I take a shower and I let it go for like 10 minutes up the base of my neck and then on my lower back so that gets me going for the day.' [Female, 61 years old, hairdresser]. Another strategy was stretching and exercising during the work day. 'When I go to the copier I do exercises by the copier, cause no one's over there, it's a really quiet area.' [Female, 53 years old, office worker]. Participants stated that respecting their physical limitations could prevent pain flare-ups. 'And you know, if you do the wrong thing in that moment, you're gonna [sic] pay for it later.' [Female, 59 years old, community outreach worker]. While avoiding tasks that exacerbated pain was important, there were also times when they made active choices to overstep functional boundaries. 'Sometimes I do things knowing it's gonna [sic] hurt me, but to be able to do it was worth it, to accomplish it.' [Female, 46 years old,

interior landscaper]. Some participants had sacrificed wearing high-heeled shoes to prevent LBP flare-ups and increase comfort.

‘The best thing our employer did was allow us to wear sneakers in stead of the corporate shoes, cause [sic] we have so much walking in our jobs and I found just doing that alleviated a lot of the back pain, cause if you have good footwear it helps a lot.’ [Female, 42 years old, shipper/receiver for a corporate mail centre].

Rearranging the work, saving painful activities for the end of the day or doing the most critical things first could be helpful.

‘If I am having a bad day they’re [the clients] perfectly happy just for me to sit there and have a cup of tea with them and keep them company . . . I make it up to them . . . On a good day I’ll flip the damn mattress, but on a bad day I am sitting!’ [Female, 57 years old, home aide for the elderly].

*Reducing pain symptoms.* Some of the workers used medication on a regular basis; others kept it available to take only with severe pain.

‘I come with my knapsack where I have BenGay® and ice . . . I keep it in the car just about everywhere I go . . . When I get in that situation where I need to put it on, I just put it on.’ [Male, 47 years old, working in health care, mostly computer work, but some lifting].

Use of health care and therapists varied and some participants chose to use providers judiciously.

‘I’ve got to take some other more radical pros to see if I can get, beyond that stage and alleviate things better, so I went to this special pain care centre . . . I can’t tell you if it’s gonna [sic] be beneficial cause I’ve just begun this, but I really feel like I need to break out of this cycle.’ [Male, 56 years old, real estate agent].

*Cognitive strategies.* Segmenting the workday by breaking the job into smaller, more manageable bits helped some participants. ‘It’ll be over soon, you know, you only got to stand here a little longer and then it’ll be over.’ [Female, 65 years old, entertainer]. Others were focusing on achievement and keeping some reward in mind for when they finished work. ‘I just kind of work through the pain, get my job done, and then I get home and get in my massage chair and then I jump in the whirlpool tub.’ [Female, 60 years old, accounting and computer tech support manager]. Listening to music could function as a distraction from pain. ‘I was into music; it’d kind of take my mind off the pain just to listen to that.’ [Male, 47 years old, working in health care, mostly computer work, but some lifting]. Positive self-talk to encourage themselves and to remind them that things could be worse was often used, even on painful days. ‘I feel if I am having a bad day, just deal with it and tomorrow

will be a better day.’ [Female, 61 years old, hair-dresser]. ‘It can always be worse, I am in pain a lot . . . but, yeah, it can always be worse.’ [Female, 49 years old, personal care assistant].

*Communicating pain effectively.* On pain flare-up days, it could be difficult to survive the day without antagonising co-workers, supervisors or clients. ‘I find it sometimes very difficult when you’re working with back pain and you’re working one-to-one on a customer and you need to put on a happy face and you’re in pain.’ [Male, 57 years old, office worker]. These days were difficult whether you were at home or at work, so staying at home to avoid negative interactions was not a preferred solution. ‘Not do anything, that is worst for you; yeah, I can tell you.’ [Female, 49 years old, personal care assistant].

Communication had different purposes, such as asking someone for help with specific tasks, asking for a work station to be altered, asking for equipment (e.g. carts, dollies, keyboard trays) or gaining support from co-workers. ‘If they could have some of those kind of standing options as opposed to just sitting at tables, it might be helpful.’ [Female, 54 years old, medical research assistant]. Knowing your audience was crucial; the participants chose carefully who to tell and how much to share. ‘So, yeah, sharing, and a little, not a lot. You don’t have to share a lot.’ [Female, 65 years old, entertainer].

One of the participants reported having an informal support group of workers with LBP. Sometimes they lunched together while talking about managing LBP at work and giving each other helpful advice. ‘Other people from my unit have the same problems so we have small support groups just among ourselves, and we don’t tell other parties and they will tell you what you have done and give you some advice.’ [Male, 47 years old, working in health care, mostly computer work, but some lifting].

Employer disclosure was also an important topic of discussion. Most workers who had communicated special needs to employers reported them to be understanding and accommodating in response. Workers who had not disclosed the problem to their employers felt the company would be unwilling to accommodate their needs, and some worried that their employment would be terminated if they disclosed the pain problem.

#### *Predominant themes*

To expand on the list of challenges and strategies described earlier, we were interested in summarising any predominant themes in the group discussion. Six major themes embodied most of the focus group discussions as described later (Figure 1).

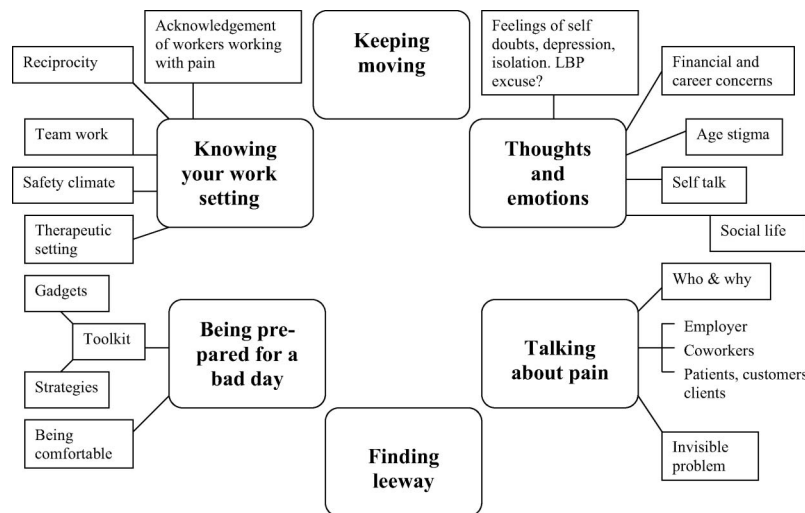


Figure 1. Extracted themes.

*Knowing your work setting.* Differences between work settings had an impact on how workers reported managing LBP in the work place. Being in a 'safety conscious' work place was considered a good thing for a worker with LBP. While non-profit employers (e.g. senior centers) sometimes provided greater flexibility to workers, working as a caregiver in this setting presented other difficulties; for example, it felt uncomfortable for workers in these settings to request special treatment (e.g. a better-sized or more comfortable chair) because this would require funds that would otherwise go to charitable work. Similar problems could occur for caregivers of seriously ill patients because LBP would seem a trivial complaint in comparison with the serious health problems of their patients.

One surprising observation among participants was that they viewed blue-collar work settings as being somewhat better suited for managing pain compared with white-collar work settings. This was reflected in a comment from one of the blue-collar workers in one of the mixed focus groups:

'It seems to me that in this group the people who are having the most problems are the ones that have office jobs and the ones that are working doing the physical work are kind of just – oh yeah, we deal with it and it's kind of what we do. And it seems like the ones that are in the worst place are the people that are confined.' [Male, 40 years old, postal worker].

White collar workers in our focus groups were particularly reluctant to file an injury claim. 'Why would you file just from sitting, I mean, if it's sitting in a chair that hurts your back or sitting in a car or whatever; I mean, I wouldn't make that [claim]. I don't think that's an employer's [responsibility].' [Female, 55 years old, labourer for car auction centre]. White collar workers in the groups seemed

to feel more stigmatised by pain and felt less justified in asking for employer assistance.

Another workplace issue raised by participants was a desire for employer recognition and reciprocity. Some felt their efforts to continue working despite LBP should somehow be acknowledged by their employers, and emotional support and special assistance should be provided without the need to ask; at the same time, they recognised that this is not always a reasonable expectation of employers. A few participants were contemplating a job change because of pain and others told of past decisions to switch careers due to pain. A waiter in a mixed group was going to school part-time with the ambition of a more white-collar position, but, after hearing complaints among white-collar workers in the group, he was a little concerned. 'I feel the same way [cannot do the present job indefinitely] so I like to get maybe some type of office job some day. Just not in her office [a call center]. I'm hoping to finish school soon, so – something with flexibility.' [Male, 26 years old, waiter].

*Talking about pain.* One theme of discussion was how best to communicate the pain problem to co-workers, clients and supervisors in the workplace. On really painful days, participants reported that co-workers could tell they were in pain just by looking at them. The stated purposes for communicating pain were to get sympathy or emotional support from co-workers or to obtain practical support to manage the job demands.

*Being prepared for a bad day.* A major challenge was to get through a workday while experiencing pain flare-ups. Participants reported a number of strategies, 'gadgets' (e.g. chair cushions and massage pillows), and remedies that were reserved for bad days. Pain

medications and pain self-care items were often stock-piled in the workplace. Sometimes, simply knowing that multiple options for pain relief were readily available in the workplace was helpful to survive a painful day.

*Thoughts and emotions.* Focus group participants had been living and working with pain for quite some time. Some wondered why they never completely recovered from LBP. Participants also worried that co-workers and supervisors might perceive them as 'slackers' and 'whiners'; in fact, some workers did question whether they might be subconsciously using LBP as an excuse for not working harder. Feeling isolated or stigmatised as a result of pain was another problem; participants emphasised that nobody could understand this kind of pain without experiencing it firsthand. Another concern was that pain increased irritability and impatience, and this could jeopardise relations with co-workers and patients/customers. Some participants worried that their reputation as an otherwise positive and good-humoured worker could be damaged during pain flare-ups.

*Keeping moving.* Many participants expressed that while working with LBP, it was vital that work tasks and the work setting did not constrain the worker in one position for too long because this would aggravate pain. Getting up and moving around was important for everyday functioning in the workplace, and this was crucial on days with pain flare-ups.

*Finding leeway.* Being granted sufficient leeway at work contributed to feelings of being valued and accepted within the organisation. Leeway could allow work tasks to be re-arranged to reduce discomfort or allow things to be done in unconventional ways or allow use of equipment not normally seen in the workplace. Examples included being allowed to sit on a ball rather than a chair, repair bicycles at table level rather than floor level, lie down on the floor during rest breaks or wear tennis shoes rather than dress shoes. One worker altered her working hours during pain flare-ups to allow for more time at the end of the day for exercise at the local gym. Another worker, who had mounted a stretch bar in his work area, explained that 'I just did it, so I mean that's the leeway I have at work'. [Male, 50 years, bicycle mechanic].

## Discussion

This focus group study has provided a tentative list of challenges, strategies and themes among workers with recurrent or persistent LBP that might serve as a basis for the design of future studies. These qualitative

results provide tentative domains for defining new self- and organisational constructs as well as for designing new intervention strategies to improve self-management of musculoskeletal pain in the workplace. By building on the everyday accounts of workers with LBP, future intervention programmes might focus on problems of greatest importance to affected workers, adopt everyday language to communicate key messages and improve their overall acceptability and feasibility. Results of the study suggest that workers refer to a number of organisational factors such as flexibility, leeway and physical and emotional support that impact their ability to manage a pain condition at work.

Job and workplace circumstances seemed to matter a great deal with regard to pain self-management strategies, and this included both physical factors (e.g. mobility, posture) as well as psychosocial aspects of work (e.g. leeway, support). Thus, while altering physical tasks may be important to remain on the job, just as important are the methods by which employees access occasional assistance and support and their communication strategies for doing so. While job modification has been a cornerstone of return-to-work programmes after long-term sickness absence, less is known about the informal strategies that workers use to make adjustments to their daily work routines and activities.

Several participants used the term 'leeway' when referring to job and employer characteristics that would allow them to modify job tasks and routines, while still fulfilling job productivity requirements. This may overlap with the concept of job control [35] that has been shown to be a buffer of job strain in general working populations. Leeway for dealing with a chronic health problem, however, may be a more specific concept, perhaps more similar to margin of manoeuvre [36]. More leeway for workers with chronic health conditions in terms of how work tasks are accomplished without reducing overall workload expectations may be one way for employers to retain their workers. For a worker to successfully manage a chronic pain condition at work, it may be necessary to know how much leeway is available given the nature of job requirements and organisational culture. Helping workers to estimate their available leeway and to recognise opportunities for work adjustment and job modification may be a possible goal of intervention.

Although more physically demanding work is usually associated with more health-related difficulties, at least one earlier study has shown manual work to be a predictor of early return to work after a sickness absence due to LBP [37]. Perhaps blue-collar work settings have a longer tradition of dealing with health and safety issues as a part of routine operating procedures and allow their workers enough

leeway to cope with LBP at work, whereas white-collar workers with pain might feel more stigmatised. In terms of intervention, there may be some slight differences in the messages and strategies that would be recommended for blue-collar versus white-collar workers.

Another consistent message among participants was that pain-related disclosures and requests at work could lead to serious problems; thus, decisions about communicating pain in the workplace should be made judiciously. Frequent pain complaints to fellow workers might annoy them or lead to solicitous responses that could inadvertently reinforce pain behaviour [38]. While pain communication in the home, especially with spouses and partners, has been the subject of past research [39,40], it's unclear whether communication with trusted co-workers might also be a factor in pain self-management. Future studies might investigate the extent to which workers with pain share their problem with co-workers, and what level of emotional, informational and tangible support workers anticipate in response. In terms of intervention, some of the strategies used to reduce solicitous pain communication in the home [40] may have some relevance in the workplace as well.

Most focus group participants described at least occasional interactions with co-workers to help manage pain, but attitudes about formal employer disclosure (to managers and supervisors) were highly variable. Concerns about disclosure were often tied to fears of job loss as well as established organisational culture and behavioural norms. Some participants expected to be replaced if they asked for help with their pain problem, so they recommended that extreme caution should be taken when making requests or demands of an employer. Instead, they preferred more informal strategies; for example, soliciting help from co-workers rather than requesting direct help from a supervisor to alter work schedules or rotate job activities.

In employment settings where workers are afraid to report chronic health conditions to superiors, opportunities to prevent loss of productivity or loss of employment are all but non-existent. Our focus group participants seemed to recognise their employers' need for productivity and profitability, and none held their employers responsible for their pain problems, even when work activities aggravated pain. However, with a rapidly aging workforce and an increased prevalence of chronic health conditions, employers may need to consider ways to maintain a more open dialogue with workers to address health and discomfort problems and to reassure workers of non-discriminatory health and advancement policies. Otherwise, employers may suffer unnecessary reduc-

tions in employee productivity and high turnover rates.

We included one group of self-employed workers with LBP to see if they would bring in some different and unique perspectives since they did not have the constraint of dealing with an employer. However, the discussions in this group were very similar to those of other groups. In their case, there were still significant constraints on leeway, although these constraints came from clients and project deadlines rather than from an employer.

Psychosocial factors in chronic pain have been the subject of much research [1,41,42] and our focus group participants referred to a number of psychological challenges and cognitive coping strategies. Particular to the workplace were feelings of decreased worth and value as an employee, also the interference of pain with attention and concentration necessary to complete work tasks. Irritability was a common complaint and participants had significant concerns that irritability had impacted their relationships with peers and customers. A number of comments in the groups could be described as examples of pain catastrophising, fear avoidance or pain distress, three factors that have been associated with chronic pain and disability [43–45]. Cognitive-behavioural strategies that have been effective in clinical populations to improve pain self-efficacy, address dysfunctional pain beliefs, and reduce emotional distress might be appropriate in the context of a workplace self-management intervention.

The questionnaire data showed that the focus group participants were experiencing moderate to severe pain and functional limitations. This information was needed to ascertain that when suggesting possible strategies to future intervention participants the strategies have been tried by workers with comparable or more serious complaints. Self-management strategies used by workers with milder symptoms may be different from the ones reported here. Future research might assess if ability to self-manage pain varies across different diagnostic groupings and by severity of pain and functional limitation.

The group of workers participating in the focus groups was a convenience sample and may not be fully representative of workers with LBP. However, the qualitative nature of this study was adequate for our purpose of eliciting information about workplace challenges and strategies, but limited the possibilities for formal hypothesis testing. All strategies reported by the focus group participants are not necessarily good strategies or strategies we would recommend other workers to use, this issue must be resolved in later research. Also, the participants came from a variety of workplaces and future studies may examine potential differences in self-management across job types and occupational settings.

The challenges and strategies discussed by focus group participants suggest that both workplace and individual factors contribute to pain self-management efforts in the workplace. Ideally, a worker-centred intervention would go hand-in-hand with reciprocal efforts of the employer to provide greater leeway and to improve support and reassurance. Future efforts to develop specific interventions in this population should focus on worker cognitions, communications with co-workers and supervisors and modifying and pacing work activities to take advantage of available leeway.

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