



Working with pain: What can workplaces do to support employees with persistent musculoskeletal pain to maintain productive employment?

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Executive Summary

Background

Approximately 6.1 million Australians are affected by arthritis or other musculoskeletal conditions (A&OV, 2013), with persistent pain conditions affecting approximately 3.2 million Australians (MBF, 2007). Substantial economic impacts are associated with persistent pain at societal and individual levels. These include loss of productivity from reduced workforce participation (A&OV, 2013), lost income tax and increased government support payments (Schofield et al., 2013).

Those with chronic health conditions, including musculoskeletal conditions, are less likely than their peers to be able to maintain employment (Schofield et al., 2013). For employees with conditions associated with persistent pain, appropriate workplace supports are crucial in maintaining their productivity. Identification of any gaps in currently available supports will enable the development of appropriate policies and procedures to support maintenance of productive employment and is the underlying premise of the current study.

This study aims to improve understanding of the relationship between the workplace and employee, in particular, the type of workplace supports needed to foster and support productive employment for employees with persistent pain. These findings can be used to develop a range of supports to assist those with persistent pain to maintain productive employment.

Study Details

Fifty working individuals (34 women and 16 men aged between 26-70 years), were recruited from Victoria, New South Wales, Queensland, South Australia, Tasmania, Western Australia and the Australian Capital Territory. Of these participants, 35 (21 women and 14 men) undertook semi-structured phone interviews, which explored a range of issues, in order to address the following research questions:

1. What are the barriers and enablers to maintaining productive employment for people with persistent musculoskeletal pain?
2. What types of coping strategies are people with persistent musculoskeletal pain using to maintain employment?
3. What workplace supports are needed for people with persistent musculoskeletal pain in maintaining productive employment and how should these supports be implemented, provided or communicated to employees?
4. Are other, non-workplace supports, needed to assist people with persistent musculoskeletal pain to maintain productive employment?

Findings

Four key themes emerged following analysis of the interview data: barriers to working productively, enablers to working productively, condition disclosure at work, and planning for work. The research questions were addressed within the context of these four themes.

Organisational factors had the greatest impact on working productively; as an enabler as well as a barrier. Organisational support was critical in maintaining employment, in particular the role of a supportive supervisor and manager who allowed employees to control their work routine (including hours and time(s) of work). A lack of organisational support and strained relationships between workers and their co-workers was likely to have negative impacts on employee productivity.

A significant barrier that has not, to our knowledge, previously been described in the literature relating to persistent musculoskeletal pain was that concerning the issue of workers' compensation claims. Several participants in the current study raised the issue of discrimination due to employers' or potential employers' perceptions that employees with persistent pain conditions are a financial liability because of the risk of potential compensation claims.

A range of coping strategies were utilised by participants to help them maintain their productivity at work: changing the nature of their work, taking regular breaks, accessing flexible work hours (changing start or finish times), working longer when well, enlisting support from colleagues, modifying the work environment and adjusting the work routine (times, duties etc.). A key workplace support for employees with persistent musculoskeletal pain was the provision of flexible working hours and routines.

Although a range of workplace supports were utilised by participants, the implementation of workplace supports is complex. Participants who had non-supportive employers were less likely to disclose their condition and therefore less likely to access and implement job modifications. Several participants were able to access strategies offered to all employees in their workplace, e.g. flexible work hours, ergonomic assessments/workstation modifications, thus avoiding the need to disclose their condition.

The most effective non-workplace support cited was an appropriate medication regimen for pain and management of symptoms. Participants also used a range of other non-workplace supports which included exercise/hydrotherapy, support groups and home help (from either family or friends). Some gaps were identified in the availability of non-workplace supports.

Recommendations

A range of recommendations are suggested to address the issues identified in the current study and are targeted at the organisational, community and individual levels.

Organisational level

Communicate with employer

- Educate employers on the advantages of accommodating employees with persistent musculoskeletal pain and the improvements in productivity.
- Encourage employers to implement inclusive strategies for all employees to have access to accommodations or job modifications without having to disclose their condition, e.g.

flexible work hours, option to work from home, 48/52 leave provisions, ergonomic assessments.

- Educate employers on their legal responsibilities regarding discrimination and employment, e.g. discrimination on the basis of potential workers' compensation claims, obligations to accommodate employees with disabilities (OHS Act, WorkCover Act).

Access to providers who specialise in making recommendations regarding workplace accommodations

- Develop a database of professionals with expertise in organisation of the work environment, e.g. ergonomists, specialised occupational therapists or physiotherapists.

Development of best practice case studies

- A number of employers have very successful strategies in place for making accommodations to facilitate productive employment. These could be developed as case studies on the A&OV website and assist other organisations seeking advice.

Community level

Increasing public awareness of conditions that result in persistent pain

- Awareness-raising days, e.g. R U Ok? Day, similar to other chronic disease awareness days.
- Workplace seminars/presentations on conditions resulting in persistent pain.

Individual level

Career planning

- Access to career advisers who can assist with developing career plans for people with persistent pain conditions. In particular, taking into account developing a plan to develop a range of skills so that career plans can be modified depending on the progression of an individual's particular condition

Employee support around the area of disclosure

- Access to advocates who can advise or assist employees in the area of disclosure of their condition, e.g. workplace visit to accompany employees when they disclose.

Availability of exercise classes and contemporary pain education/management

- Offer exercise and therapy classes outside work hours so that employed people with musculoskeletal pain can attend.
- Offer pain education sessions to employees and employers that adopts a contemporary approach to understanding and managing persistent musculoskeletal pain.

Personal support

- Access to support groups dedicated to maintaining employment, covering issues related to dealing with workplace issues and developing strategies for career management.

Future Directions

This study has described the varied experiences of employees working with persistent musculoskeletal pain. Key themes were identified concerning the interface between employment and persistent musculoskeletal pain conditions. The recommendations provide a range of opportunities for A&OV, employers and relevant organisations to implement strategies and practices to facilitate the productive employment of individuals with persistent musculoskeletal pain.

1. Background

Approximately 6.1 million Australians are affected by arthritis or other musculoskeletal conditions (A&OV, 2013), with persistent pain conditions affecting approximately 3.2 million Australians (MBF, 2007; Puolakka et al., 2009). Pain of musculoskeletal (MSK) origin accounts for the largest proportion of non-cancer pain. MSK pain can arise from a range of condition including osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, and a range of spinal problems. Substantial economic impacts are associated with persistent pain at societal and individual levels. These include loss of productivity from reduced workforce participation (A&OV, 2013), lost income tax and increased government support payments (Schofield et al., 2013). Recent analysis has estimated costs related to early retirement due to arthritis at \$9.4 billion in lost GDP, primarily attributed to reduced labour force participation (Schofield et al., 2012; 2013). In a recent report estimating the economic impact of persistent MSK condition in Australia in 2012, costs attributed to lost productivity far exceeded other costs (NSPAC, 2012; Arthritis and Osteoporosis Victoria, 2013).

An increased focus on extension of working lives (NSPAC, 2012; Oakman & Wells, 2013) due to our ageing workforce suggests an urgent need to improve understanding of the relationship between employees with persistent pain and the work environment, particularly their capacity to maintain productivity at work (Oakman & Wells, 2013). As a result of population ageing, the prevalence of chronic conditions is expected to increase in the next 20 years (Koolhaas et al., 2013). In particular, the prevalence of MSK conditions is projected to soar in the next two decades (Arthritis and Osteoporosis Victoria 2013). With the underlying premise that those in good-quality work are healthier than those who are not (Black, 2013; Waddell & Burton, 2006), the development of appropriate strategies to maintain sustainable employment for those with persistent MSK conditions is paramount. Evidence suggests that those with chronic conditions, including MSK, are less likely than their peers to be able to maintain employment. Hence, the development of appropriate support is necessary and is the premise of the current study (Schofield et al., 2013).

The rapidly changing nature of the work environment means that workplace requirements are shifting and new technologies are enabling work to be done in very different ways, with both positive and negative impacts for those with chronic conditions. More work can be done remotely due to improvements in technology thereby reducing the need for commuting, which is often cited as a problem for those with conditions resulting in persistent pain and mobility restriction (Munir, Randall, Yarker, & Nielsen, 2009). However, increased demands or work intensification can be problematic, particularly work with very short deadlines or high levels of stress, which may coincide with an exacerbation of an individual's condition. A good match between workplace and employer is always important but for those with chronic conditions achieving a good person–environment fit is paramount to meeting the goal of sustainable and productive employment (Costa-Black, Feuerstein, & Loisel, 2013).

The use of work and non-workplace supports are an important component in achieving a good fit between employer and employee. In addition, identification of any gaps in currently available supports will enable the development of appropriate policies and procedures to support maintenance of productive employment.

To further understand the range of potential barriers to employment for those with persistent pain conditions, a broad conceptualisation of what constitutes barriers is needed to sufficiently account for all factors likely to impact an individual's ability to work productively. To ameliorate some of these barriers, a range of job accommodations are promoted as potential solutions to maintenance of productive employment. However, definition of suitable job accommodations is often not clear and the subsequent uptake of modifications and success due to these changes is not adequately understood (Munir, Jones, Leka, & Griffiths, 2005). Adaptations to enable those with chronic conditions to remain active participants in the workplace may target work or non-work based activities; these include modification to work hours, duties, equipment, access to the building, the number and timing of rest breaks, or transportation to work (Allaire, Li, & LaValley, 2003).

Disclosure of a chronic condition at work has been identified as an important predictor of whether workplace adjustments or accommodations will be instigated (Munir, Jones, et al., 2005). However, this finding is not consistent; some report no links between disclosure and provision of accommodations (Gignac & Cao, 2009). The issue of disclosure is not straightforward and is potentially influenced by the relevant workers' compensation schemes in which the organisation is located. Employee risk is involved in making the decision to disclose a personal chronic condition (Gignac & Cao, 2009; Tveito, Shaw, Huang, Nicholas, & Wagner, 2010). Furthermore, compensation schemes which distinguish between work and non-work related injuries or conditions, and where employers are liable for any exacerbations of pre-existing injuries or disorders, are likely to act as a disincentive to employment of people with chronic conditions. Some evidence suggests that whilst disclosure may result in the implementation of more appropriate accommodations (Munir, Leka, & Griffiths, 2005) little has been documented about employees' fears of job loss or discrimination if they are transparent about chronic conditions. The area of disclosure at work requires further exploration, as substantial variations in the legislative environments across countries are likely to be highly influential in employees' willingness to discuss their non-work related chronic conditions.

In addition to the maintenance of employment, workplace productivity is a critical consideration. Workplace productivity is a complex construct and challenging to define in a meaningful way. Escorpizo et al. (2007) suggests productivity is a combination of absenteeism and presenteeism. Absenteeism is straightforward and can be easily defined as time away from work; in comparison, presenteeism raises some challenges in measuring and has been defined variably by different authors (Johns, 2012; Li, Gignac, & Anis, 2006; Puolakka et al., 2009). Most commonly, presenteeism is defined as the loss of productivity or performance while at work due to health reasons. A significant issue is how to measure presenteeism, particularly in work that is highly varied in nature.

Greater understanding of the relationship between employers and employees with persistent pain is needed to ensure that adequate supports are available to encourage the development of long-term sustainable employment. A good match between the workplace and the employee is a first step in this relationship but this is a complex and multifaceted partnership. This study aims to improve understanding of this relationship and, in particular, the supports needed to foster good employment for those *working with pain*.

2. Method

2.1 Aim

The aim of this project was to explore in depth the relationship between employees with persistent pain of MSK origin and their workplace. Specifically, we sought to identify any supports – work and non-work – used by Australian employees to assist in maintaining productive employment.

2.2 Study design

This was an exploratory, mixed methods study which used a questionnaire and semi-structured interviews. The questionnaires gathered descriptive background data that were used to select participants for interviews. The semi-structured interviews explored a range of issues in order to address the following research questions:

1. What are the barriers and enablers to maintaining productive employment for people with persistent MSK pain?
2. What types of coping strategies are people with persistent MSK pain using to maintain employment?
3. What workplace supports are needed for people with persistent MSK pain in maintaining productive employment and how should these supports be implemented, provided or communicated to employees?
4. Are other, non-workplace supports needed to assist people with persistent MSK pain to maintain productive employment?

2.3 Ethics approval

Ethics approval was obtained through the La Trobe University Faculty of Human Ethics Committee, approval number FHEC14/048. Study participants were provided with written and verbal information regarding the study; all participants provided informed consent.

2.4 Recruitment strategy

Participants were recruited through a targeted national advertising campaign. An advertisement flyer was developed by the researchers in conjunction with Arthritis and Osteoporosis Victoria (A&OV). The flyer was publicised through websites, Facebook, Twitter, newsletters and networks of the following organisations: A&OV and equivalent interstate offices, Chronic Pain Australia, Pain Australia, Male Health Victoria and A&OV peer support groups (Ankylosing Spondylitis Support Group, Men's Support Group, Young Women's Arthritis Support Group). Participants were asked to contact the researchers by phone or email to obtain further information. Eligible participants then completed the online or a paper version of the questionnaire.

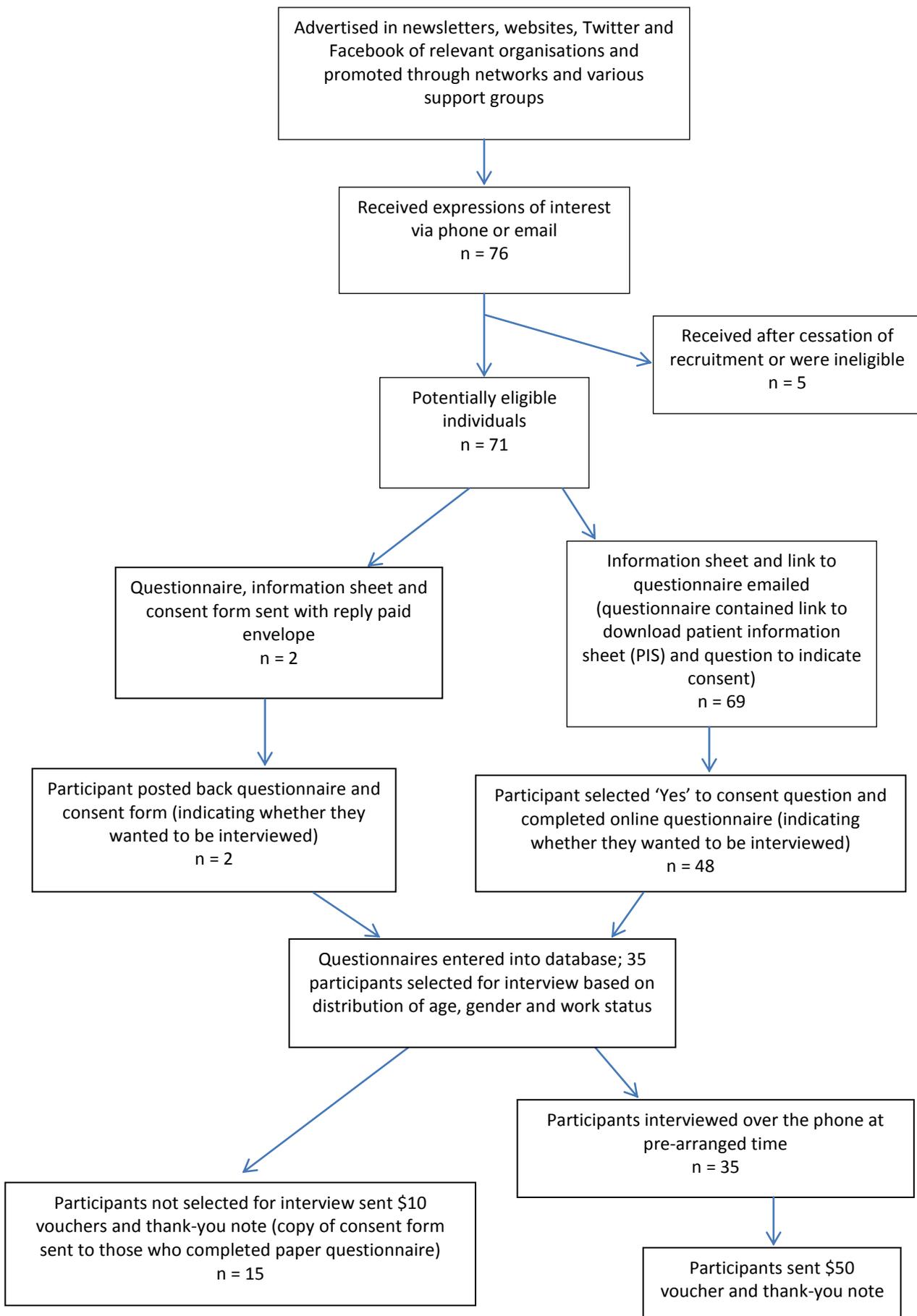
To participate in the study, individuals needed to be:

- aged between 25–65 years;
- working more than 8 paid hours per week;
- have unresolved MSK pain in one or more body locations for a duration of 6 months or more;
- able to read and speak English.

A total of 76 individuals contacted the research team in response to advertising during the period February 2014 to August 2014. Recruitment was completed in August following attainment of the *a priori*-defined sample size. The recruitment and data collection processes are described in Figure 1.

Thirty-five participants who completed the questionnaire (21 women and 14 men) were selected for interview. A maximum heterogeneity sampling strategy was used to ensure a reasonable spread of age, gender and working hours. The purpose of this strategy was to include a wide range of participants with diverse perspectives. This sample reflects the prevalence of arthritis and other MSK conditions in the Australian community (33% women versus 22% men) (ABS, 2012).

Figure 1. Recruitment Strategy



2.5 Data collection

Quantitative data were collected via an online questionnaire between June and August 2014. Qualitative data was obtained through semi-structured phone interviews between July and September 2014.

2.5.1 Questionnaires

The study questionnaire was administered via an online software survey tool, Qualtrics, to all participants with the exception of two who opted to receive a paper copy of the questionnaire. The questionnaire collected basic demographic information (age, gender, occupation) and background information about work history, workability, pain levels and work productivity. Survey data were entered into SPSS software version 22, IBM Corporation and descriptive analysis undertaken.

Work Ability

The Work Ability Index (WAI) (Ilmarinen, 2001) was used to measure current levels of work ability. A single item 'What is your current overall ability to work compared with your lifetime best', with a Likert scale of 0 (cannot currently work at all) to 10 (ability to work is at its best), was used in the study.

Pain and discomfort

Discomfort/pain rating (both frequency and severity) were recorded separately for five body regions. Frequency was recorded on a numeric rating scale of 0–4 (*Never to Almost always*) and severity from 1–3 (*Mild, Moderate or Severe*). Scores were calculated for each region by multiplying the frequency and severity. These scores were then added together to form an overall score out of a possible 60 (Oakman, Macdonald, & Wells, 2014).

Productivity

A range of measures were used in relation to productivity, including absenteeism.

Data on absenteeism were collected using an item from the Örebro Musculoskeletal Pain Questionnaire (Linton & Boersma, 2003). The item (*'How many days of work have you missed because of pain during the past 18 months?'*) includes a 10-point scale ranging from 0 days to over 1 year.

Three standardised measurement tools were used to assess productivity in the workplace; all had been previously validated (Beaton et al., 2010):

- The Workplace Activity Limitations Survey (WALS) (Gignac, 2005; Gignac, Sutton, & Badley, 2007) assesses activities related to the workplace, e.g. getting to and from work, as well as activities at the workplace. The WALS includes a 4-point Likert scale, *No difficulty to Not able to do*, as well as two additional points, *Difficulty unrelated to arthritis* and *Not applicable*. Internal consistency for this scale was $\alpha=0.84$.
- The Stanford Presenteeism Scale (Koopman et al., 2002) measures presenteeism of work process and work outcomes in the past month. This uses a 5-point Likert scale, *Strongly disagree (1) to Strongly agree (5)*, to assess responses to questions such as *'Because of my chronic musculoskeletal condition, the stresses of my job were much harder to handle.'* Internal consistency for this scale was $\alpha=0.71$

- The Workplace Limitations Questionnaire (WLQ) (Lerner et al., 2001) consists of 25 items across 4 dimensions (limitations handling time, physical, mental–interpersonal and output demands). It measures the percentage of productivity loss due to health problems during the last two weeks, i.e. the difference in work output between those employees with health limitations and a benchmark based on those without limitations (Lerner et al., 2001). It uses a 5-point Likert scale; internal consistency for this scale was $\alpha=0.71$.

2.5.2 Semi-structured interviews

An interview schedule was developed by the researchers. It covered the following areas: employment situation, workplace challenges, workplace supports, coping strategies, motivations, future options and resources. All interviews were conducted via telephone. Interviews were conducted individually and ranged in length from 40 to 60 minutes duration with each being audio-recorded with the participant’s consent. Audio recordings were later transcribed and analysed thematically using NVivo software to assist with data management.

The first two interviews were conducted jointly by two researchers who conferred and revised the interview schedule. Interviews did not necessarily follow the order of the schedule; however, all topics were covered during the interview. Three interviews were conducted by one of the researchers, and the remaining 30 were conducted by the other researcher.

2.6 Data analysis

NVivo software was used to assist with data management and the categorisation process. Interviews were analysed using grounded theory approaches to define categories, and the use of memo writing to assist with analysis of emerging categories (Charmaz, 2014). Categories were then inductively developed into themes; sub-themes were developed to strengthen analysis of the data. To establish consistency in coding, two interview transcripts were randomly selected and read independently by two researchers to develop codes and identify themes. The researchers then conferred and a consensus was reached on codes and emerging themes within the data. These codes were used as a basis for subsequent coding of the remaining transcripts. If new codes were required due to emerging themes, these were added during the process.

3. Results

3.1 Participant information

A total of 50 participants were recruited for the study from the following States and Territories: Victoria, New South Wales, South Australia, Western Australia, Australian Capital Territory, Tasmania and Queensland (see Figure 2). All participants completed the questionnaire and of these, 35 took part in a telephone interview.



Figure 2 Distribution of survey participants

Background characteristics from those who responded to the questionnaire are summarised in Table 1. Of the 50 participants, 16 were male and 34 were female, with an age range of 26–70 years. Although the selection criteria stipulated an age limit of 65 years (based on the Australian retirement and current pension eligibility age), several employees over the age of 65 years responded to recruitment advertisements and were included in the study. The majority of participants had been diagnosed with a form of arthritis (92%) and the remainder with a range of other persistent MSK conditions such as back or shoulder injury. Most participants reported having persistent pain for at least 10 years. Slightly more participants were working full-time compared to those working part-time.

Table 1: Summary characteristics of questionnaire participants

	N (%) total cohort	N (%) interviewees
Age, mean (SD) years Total cohort: 43.9 (11.76) range 26 – 70 years Interviewees: 44.6 (13.1) range 26 – 70 years		
Sex:		
Male	16 (32)	14 (40)
Female	34 (68)	21 (60)
Residence:		
Victoria	27 (54)	26 (74)
New South Wales	9 (18)	7 (20)
Queensland	1 (2)	0
South Australia	1 (2)	0
Tasmania	1 (2)	0
Western Australia	1 (2)	1 (3)
ACT	1 (2)	1 (3)
Unknown	9 (18)	0

	N (%) total cohort	N (%) interviewees
Diagnosis*:		
rheumatoid arthritis	23 (46)	15 (43)
osteoarthritis	14(28)	8 (23)
reactive arthritis	1 (2)	1 (3)
fibromyalgia	10 (20)	3 (9)
ankylosing spondylitis	9 (18)	9 (26)
psoriatic arthritis	2 (4)	1 (3)
non-arthritic back or shoulder condition	10 (20)	9 (26)
combination of above	15 (30)	10 (29)
Duration of pain condition:		
1–3 years	10 (20)	8 (23)
3–5 years	5 (10)	5 (14)
5–7 years	3 (6)	2 (6)
7–9 years	3 (6)	2 (6)
10+ years	29 (58)	18 (51)
Occupation sector:		
Education	10 (20)	5 (14)
Health (H)	12 (24)	10 (29)
Manufacturing (M)	2 (4)	1 (3)
Trade	2 (4)	2 (6)
Administration	23 (46)	17 (48)
Hospitality/Retail	1 (2)	0
Hours worked per week:		
12–16	7 (14)	5 (14)
20–25	7 (14)	6 (17)
26–32	7 (14)	3 (9)
36–40	16 (32)	13 (37)
41–50	10 (20)	6 (17)
50+	3 (6)	2 (6)
Overall health as self-assessed:		
fair	19 (38)	14 (40)
good	18 (36)	10 (29)
very good	11 (22)	9 (25)
excellent	2 (4)	2 (6)
* some participants have multiple diagnoses and will be recorded more than once		

Table 2: Productivity measures participants (total cohort)

Measure	mean (SD) total cohort	mean (SD) interviewees
Discomfort score/60	26.74 (11.32) range 3–50	24.6 (11.1) range 3–44
Workability/10	6.2 (1.86) range 3–10	6.3 (2.0) range 3-10
Work Activity Limitations Survey (WALS) (0–4 no to little disability, 5-8 moderate disability, 9+ considerable disability)	12.7 (5.8) range 1–24	12.0 (6.5) range 1-24
Stanford Presenteeism Score (possible score 6–30)	18.42 (3.95) range 12–30	19.5 (4.0) range 12-25
Workplace Limitations Questionnaire (WLQ) Productivity Loss percentage	8.57 (4.41) range 0.22-19.4	7.6 (4.3) range 0.24-16.6
Days missed work in last 18 months:	N (%)	N (%)
0 days	7 (14)	5 (14)
1–2 days	11 (22)	7 (20)
3–7 days	15 (30)	11(31)
8–14 days	5 (10)	4 (12)
15–30 days	5 (10)	2 (6)
2 months	5 (10)	5 (14)
3–6 months	2 (4)	1(3)

The impact of a participant’s conditions on their productivity, pain and workability was variable. Self-reported absenteeism was also varied, with lost days ranging from no days to two months absent from work (Table 2).

Results from the WALS indicate that many participants were experiencing a considerable level of workplace disability. Scores of 0-4 reflect little if any disability, 5–8 reflect moderate disability and a score of 9+ indicates considerable disability with associated negative job outcomes (Gignac, Cao, Tang, & Beaton, 2011).

The Stanford Presenteeism Scale is not norm-referenced or standardised; however, a higher score represents a lower degree of presenteeism, i.e. a greater ability to concentrate on and complete work tasks despite having a health condition. Scores range from 6 to 30. Similar to the WALS, the results from the questionnaire indicate participants were experiencing a moderate degree of impaired work performance.

The WLQ result indicates the majority of participants were not experiencing a major productivity loss. The highest productivity loss was 19% and the lowest was 0.2%.

3.2 Interview data

Thirty-five participants (14 males and 21 females) were interviewed via telephone using a semi-structured interview process. Following analysis, four key themes emerged: barriers to working productively, enablers to working productively, condition disclosure at work and planning for work (Table 3).

Table 3: Key themes from interview data

Themes	Sub-theme
Barriers to working productively	organisational factors physical environment personal limitations
Enablers to working productively	supportive employer job design modifying the physical environment medication access to resources personal characteristics
Condition disclosure at work	open disclosure disclosure avoidance incidental disclosure
Planning for work	upgrading skills changing jobs reconsidering career options/retraining

Barriers to working productively

Barriers to working productively describes the range of challenges that employees with persistent MSK pain face in the maintenance of productive employment. This theme included three sub-themes: organisational factors, physical environment and personal limitations.

A critical factor to workplace participation and productivity was the influence of **organisational factors**. Participants outlined a range of organisational factors, which could present as barriers or enablers to being productive. Organisational barriers included a lack of support from the organisation (no flexibility with rostering, sick leave not approved) resistance to implementing physical or job design modifications, human resource policy problems (unclear reporting structures, lack of occupational health and safety policies) or conflict with managers or colleagues.

Several participants discussed their work performance difficulties with managers and colleagues but were met with a lack of understanding, or support. For example, some participants requested ergonomic adjustments to their workstations but were refused or ignored: ‘I don’t bother reminding them because they’re just sort of say, oh yeah we’ll get onto it, we’ll get onto it and they just never do’ (female, office manager, 57 yrs).

Workplace rosters were a mechanism whereby support could be provided for individuals. Rest between shifts or work days were important ways for individuals to self-manage their condition. However, support was not always forthcoming, as highlighted by this participant:

I went to the Director of Care over it at one stage when I was not coping, and if they'd listened, or had a talk and tried to maybe see if there was a way we could deal with it, that would have been nice ... the hardest thing at the moment is, which I wish, I asked them to stop doing but they haven't, is they're only putting a day in between my days off (male, nurse assistant, 29 yrs).

Rostering structures also resulted in some participants making changes to their work and leave arrangements as a means to manage their condition(s):

I couldn't keep being sick because that affects the man hours and then it affects the budget, she [the manager] doesn't get her bonus from head office ... so that's when I said 'For six weeks I'll reduce my shifts' and of course I took then leave without pay so that doesn't affect the man hours or the budget where theoretically I should've taken sick leave because I've been there for 20–30 years, I've got heaps of sick leave ... she would've been grumpy and made your life miserable and then when you ask for annual leave then she wouldn't necessarily sign the form as easily (female, nurse, 43 yrs).

It's really hard to find cover if we take sick leave, and I had asked a lot of times, you know, 'can we get anyone to come in next week so I can have a week off?' ... my manager reported back that she couldn't find anyone. So then I didn't really feel comfortable taking sick leave, knowing that there wouldn't be anyone to cover me ... then they actually didn't really want me to keep working any more, they asked me to resign ... I'm in the process of giving them medical reports from my specialist to convince them that I am capable of working now (female, health professional, 27 yrs).

Other barriers presented were in the form of unreasonable expectations from employers: 'As far as support goes, where I was [working] before there was little to no support. If you were injured, you were seen as someone with rabies or something ... They got rid of me' (male, store person, 34 yrs).

Why aren't you quicker? You're always getting the 'Why are you slow today? Why are you lagging behind? Why do you look so tired?' ... they would think I'm more useless, and I shouldn't be on the job ... sometimes you get labelled as lazy because you're not going quick enough (male, nurse assistant, 29 yrs).

She [manager] wanted a list of my medications, she wanted to speak to my rheumatologist, she wanted all these things, but in the end, she settled for a letter from my doctor, saying that I was fit to work, but I was not capable of doing night shift ... I don't know if you'd use the word threaten, she said to me that they were going to, she was possibly going to pull me from my job and she was going to put me in some back office doing admin work (female, nurse, 41 yrs).

The **physical environment** describes the environment, and work that was physically demanding that presented a barrier to participation for some participants:

... because I can't straighten my back right up at the sky, it's hard for me to look up at branches that are too high, and because I sort of look up on a slight angle, that can throw me off the balance of the ladder too (male, tradesman, 41 yrs).

... you've got to load wheelchairs onto the buses and walkers and then when you get to the other end, unload them all and then load them back on again to come home and unload them when you get home ...when you're nursing, you're getting them in

and out of bed, you're putting them on toilets, you're showering them, things like that and that's when I find it's even worse (female, nurse, 60 yrs).

Some participants were unable to manage the physical challenges of their job and subsequently changed their careers:

I was in the performing arts industry, which is what I always wanted to do, and because that's physical type of work I ended up having to give that away ... I thought full-time work was too hard because my arthritis was really quite crazy at that time, so I looked at part-time work (female, research officer, 46 yrs).

Additional challenges with the workplace physical environment included stairs, and buildings with poor climate control. Over half the participants reported difficulties with stairs or ambient temperatures in their workplace. These aspects of the physical environment often exacerbated existing symptoms of the persistent pain condition:

I'm on the 19th floor and ... if there was an actual fire of course I'll make it down the stairs. But for a fire drill I think I would just have to say to them, if I'm going down the stairs I'm bringing my bag with me and going home, because I'm not going to be able to work for the rest of the day (female, health manager, 32 yrs)

... our work's air conditioning system is a bit stuffed up at the moment so it can get quite cold on our level, especially if it's cold outside, because it's a glass building. So just them managing the heating more could help (female, marketing, 26 yrs).

Commuting to work presented a barrier to participation for some participants. Poor access to disabled parking or a lack of suitable public transport were commonly cited as problems for participants. Choosing work in close proximity to home was considered an important factor in determining employment options:

I actually deliberately chose something in this area rather than anything that was in the city or further across town, I didn't even bother applying for because I knew that it was becoming a real issue for me to drive in peak hour, on a regular basis; I can do it, I can drive myself around for most things, but doing it day to day was really hard on the hands and feet (female, administration, 43 yrs).

... by the time I walk to the bus stop, and I stop waiting for the bus, I almost seize up and to get up the step is very hard ... I catch a bus on days that I can, and on days that I can't I have a half-price taxi card (female, administration, 58 yrs).

Personal limitations in maintaining productivity at work were related to the nature of an individual's condition. Individuals had a range of symptoms which varied in severity and tended to change from day to day. Some participants felt that their productivity was only minimally impacted whilst others were cognisant that at times their condition more strongly affected their work performance. Symptoms reported by participants included pain, fatigue and joint limitations. Participants were often insightful into the impact of their condition on their output:

I can notice from what I am producing that I am in pain, because I'll write a word and the spelling will be completely wrong or I'll relook at it and the writing doesn't actually make sense because my head's in a different spot (female, health manager, 32 yrs).

For some participants, a reduction of working hours was needed to manage their condition:

'I was working full-time, and I was just taking that much sick leave that I was getting into trouble for it, so I cut my hours' (female, nurse, 41 yrs).

The impact of these personal limitations on participants' workplace productivity was highly influenced by the organisational support structures in place to assist individuals manage their conditions whilst continuing to work. That is, with appropriate support most limitations could be managed to reduce the impact on productivity.

The use of appropriate medication to manage conditions was both a barrier and an enabler for productivity. Side effects of medications could be problematic, as reported by this participant: 'they [the medications] make you tired, and they tend to make you drag, and then you know that your performance at work is affected a little bit, or the physical because they make you groggy' (male, manager, 34 yrs). For some participants the outcomes were more serious: 'I lost my job due to – my full-time job – as an office manager and book keeper due to the – my physical condition and the medications that I was on' (female, administration, 51 yrs).

A common issue was the difficulty of managing a condition prior to a formal diagnosis. The lack of clarity around the reason for symptoms was problematic for individuals in dealing with employers and colleagues:

I think that's a big problem for people when they're in that process of trying to get a diagnosis, but they don't know what's wrong, and they don't have that legitimacy of being able to say, 'This is what's wrong with me, here's some information about it, you go read about it.' I think that's the worst part (female, tutor, 33 yrs).

Many participants expressed some frustration with the unpredictable nature of their condition: 'Planning for a future, it's near impossible because I don't know from one day to the next what my body's throwing at me' (male, lecturer, 49 yrs).

Participants were restricted in relation to the types of jobs as well as the number of hours they could work. This had an ongoing economic impact, as described here:

I mean the position that I'm working at is slightly below what I technically should be doing, but because I couldn't apply for full-time jobs, I had to sort of take what I could (female, research officer, 32 yrs).

I've been given the opportunity, if I want to, to do extra hours. So I've got to weigh that up over the coming weeks, as to: the extra hours will certainly help me financially, it's a job that I can do; but is it going to exhaust me too much, is it going to be too hard on my body to manage it? (female, administration, 43 yrs).

Some participants, unable to work full-time, were faced with limited promotion opportunities and potential early retirement due to their condition: 'I couldn't keep working like this for another 20 years. You'd end up being a cripple' (female, nurse, 43 yrs).

It's very hard to, I find, step up in a career when you have these limitations and so if you are in a junior position to try and prove yourself that you can take on more responsibility, if you're taking days off, it's very hard to – on one hand, say you're taking days off all the time but then the other hand say, 'I want more responsibility'. It doesn't really come hand in hand, so to really push forward in a career with a chronic illness, it's quite difficult I've found (female, senior executive, 30 yrs).

Barriers were numerous and varied, resulting in limitations to participants' ability to maintain productive employment, their career prospects and ultimately their economic future: 'You don't want to look too far into the future, you might scare yourself' (male, administration, 60 yrs).

Enablers to maintaining productive employment

Enablers to maintaining productive employment were identified as the mechanisms through which individuals and organisations could facilitate a supportive work environment which enabled workplace participation. Enablers were described through the following sub-themes: ***supportive employer, job design, modifying the physical environment, personal characteristics, medication, and access to necessary resources.***

Support from the employer was the most influential factor in determining a participant's productivity and ability to remain at work: 'the flexible aspect of the people in charge have been my biggest help' (female, administration, 69 yrs).

If it wasn't for the fact that they understand and are happy for me to be flexible when I need to and also that it can flare up ... then certainly it would probably have a huge impact on my productivity (female, education coordinator, 31 yrs).

I have half a flex day a couple of times a month but the supervisor I had at the time and I still have him now, he sort of went past those rules and just said, 'Look, do your 38 hour week and meet your milestones. Do whatever you need to do to get by.' They have an onsite physio, which I've utilised on a number of occasions, and any request on the odd occasion where I've needed to do something or not do something they've been more than accommodating (male, engineer, 41 yrs).

Conversely, participants without high levels of support from their employer or with low levels of control in relation to their work routine or hours, reported these as barriers to productive employment:

... you're on your feet for eight and a half hours, it's just too much ... they've asked me to go back on the floor because they didn't have many senior staff. But I just find it's too hard. I come home nearly in tears every time I do it (female, nurse, 60 yrs).

Job design concerns the work structure and organisation. It includes the number and timing of working hours and the amount of control an individual has over how they undertake their work. Most participants regarded flexible working hours as critical to their ability to

maintain employment. Being able to choose the number of hours worked per day or number of days per week, and the ability to undertake some of their work from home, was greatly beneficial in assisting participants to remain productive at work:

... flex time, so as long as I keep a handle on it I can work less some days and more others, or come in an extra day, because I only work three days a week. I can come in another day to make up the hours and that kind of thing, so that's actually quite helpful for me (female, research officer, 32 yrs).

For me it's really important that on days I'm just too tired...I'll rest for half of today and just pick up the work, pick up my time and do the work another day (female, OHS consultant, 27yrs).

Another enabler was having some level of control over how work was undertaken during the day, e.g. regular breaks for stretching or walking: 'I used to take a break probably every 30 to 45 minutes to just go for a walk for a minute. Sometimes if it's really, really locked up and painful I'd be gone for 10 or 15 minutes' (male, engineer, 41 yrs).

Some participants indicated strong support from supervisors or managers:

They're pretty good, like the boss said, 'If you're stressed or hurting get up and go for a walk', they're alright with that. They're not going to jump on me if I leave my desk for ten minutes (male, IT officer, 58 yrs).

Other participants had flexible work routines that enabled them to pace their work and organise their tasks to assist with managing their particular condition:

... just timing, when I do particular jobs and trying to break it up. In the mornings, if I can, if I get the choice, I'll do the more mundane tasks, whereas I'm more mentally alert in the afternoon. Usually, the least amount of pain I'm in is usually in the afternoon, as I said, the mornings are not good and evenings are not good; so I try to have the more demanding tasks in the afternoon (female, administration, 43 yrs).

Participants with high levels of control over their work hours were better able to manage their challenges with commuting: 'now that I've negotiated further, I can start half an hour later and scrap my lunch break, it's even better, because the train is not over full' (female, administration, 69 yrs).

Participants in more senior roles or who were self-employed were in a stronger position to control how they organised their work and their work environment:

Twenty years ago I set up my own consulting practice which gave me the flexibility to work the hours and the days I wanted, so when you get an assignment you might work full-time for three months, but then you have a month off, that sort of thing (male, consultant, 59 yrs).

Modifications to physical environment included factors such as appropriately designed workstations, improved access to the workplace and assistance from colleagues with more physically demanding tasks. Access to ergonomic assessments, properly fitted workstations

and other appropriate equipment such as lifts, trolleys and handles was a big employment enabler for the majority of participants: 'I have now got a standing desk. It's the best thing I've ever had ... Really made a difference to my working life, yeah' (female, senior executive, 54 yrs).

They sent in an OT just to assess the work situation, they actually provided the specialised chair ... making sure that all of the benches are at correct heights that the computers – that everything basically is set up as best it can be for someone with my situation ... they've put in ramps ... I use music as a distraction to the pain ... there's bars around the toilets, the main toilet (female, health worker, 51 yrs).

The majority of participants who were interviewed took pain relief **medication** to assist them at work. Many participants utilised a range of other supports or therapies such as heat packs, transcutaneous electrical nerve stimulation (TENS) machines, massage, diet supplements, exercises, cushions or orthotics. The side effects of the pain medication were an issue for some participants, as previously described. In order to function effectively at work, participants on high dose pain medication, e.g. narcotics, had to manage the timing of a dose to ensure that their concentration was not compromised:

I'm on Panadeine Forte pretty much all day every day. So I do need to take tablets basically throughout the day, but that's easy enough, I've always got them in my bag, I just have a drink with me at my desk so I just put them in ... I take my medications and things at the right times so that I'm generally fairly quite functional at work (female, administration, 43 yrs).

Most participants recognised the benefits of exercise and keeping active, particularly being conscious of moving/stretching regularly during the day at home and work: 'I try and work hard at keeping myself as fit as I can be. With a regular exercise regimen' (male, doctor, 59 yrs).

... for me, movement is the key to keeping the injury [MSK condition] – keeping my body from suffering too much pain ... so I just encourage movement, if they're able to run, run, if they're able to walk, walk, if they're able to swim, swim just do something, just keep moving (male, health worker, 38 yrs).

Some participants had access to a gym at their workplace:

... now I'm in the habit, I've just got to get up and move around ... our gym that we've got in the office is about ten metres away from my desk. So quite often during the day, I'll just get up, walk in there do some stretching, a bit of movement, that sort of thing, and then just go and sit back down on my desk. So it's very convenient (male, IT manager, 53 yrs).

Access to resources, in the form of support groups, websites, pamphlets or health professionals, contributed positively to the maintenance of ongoing employment for some participants. Some participants reported positive experiences through interactions with support groups:

... it's called the Young Women's Arthritis Support Group ... I've made a lot of great friends through there as well ... [talk about] about equipment and aids that are available if we need them, or just how to handle if they're not getting the support that they need at work, or different things to say to people ... we're all trying to help each other out looking for ideas for casual work, or online work, things like that (female, administration, 43 yrs).

Other participants expressed concern about the negativity of support groups:

Spurred each other on by the negativity ... just telling worse and worse and worst stories instead of being supportive ... It was quite sad to see and I just had to get away from it because it was so negative. It would be helpful for these people to see that it's possible to keep working (female, health manager, 32 yrs).

One participant suggested an alternative support group focused on workplace issues:

... if you had a support group really aimed in the work aspect, to have creative things, so when somebody said, 'Hey, I was in this role. I can't do it anymore, what else could I do?' and just be able to workshop through those things (female, senior executive, 30 yrs).

In addition to support groups, some participants accessed information online or were given information resources from health professionals. One participant received a pamphlet from his doctor to pass on to his workplace: 'He did give me an information sheet that I could have passed on and I did in the earlier stages, and it's off I think the arthritis website about it' (male, engineer, 41 yrs).

A number of participants reported a government-funded program that had been particularly useful:

I have been already saying to a lot of people to contact Commonwealth Rehabilitation Services (CRS) because they are all over Australia. There's other organisations, I think, that are similar, but these guys are a government organisation ... the CRS people came out to one of our support group meetings, back in April, and that went down really well because they were talking about all the services and things available to help people find work, and help people who are currently in work to stay there as well (female, administration, 43 yrs).

Some participants reported making contact with Arthritis & Osteoporosis Victoria for information, and spoke positively of the interaction: 'whether it be Arthritis Victoria, or another type of association or organisation like that, in their local community for some guidance and information, because I know that that helped me' (male, manager, 34 yrs).

Although most participants reported sufficient access to information on a personal level, particularly through the internet, a strong theme was the need for greater public awareness of persistent MSK pain conditions, in particular arthritis. Participants expressed concerns about the lack of public knowledge concerning the condition, and this was related to the level of support offered at the workplace. Participants suggested that if employers and colleagues were more educated about their conditions, they would possibly be more

supportive. Information designed for workplaces seemed to be an area that required improvement. A role exists for advocacy services in which external professionals visit the workplace and represent employees: 'I guess if it was promoted more then people would feel more comfortable about requesting support and employers would be more aware of the problems caused by arthritis and other pain conditions' (female, health professional, 27 yrs).

... a little bit more of an awareness for everybody that people deal with certain physical ailments. I don't think that many people are aware that things like arthritis do affect productivity, and I think that maybe that might be beneficial (male, manager, 34 yrs).

Personal characteristics made an important contribution to the challenges of working with a chronic condition. Participants highlighted a range of characteristics that they considered essential in maintaining ongoing employment. These included the ability to develop practical strategies to overcome problems, having a positive approach, having determination and the ability to develop strategies to manage pain. A range of practical strategies were utilised, often specific to the participant's workplace: 'I have a pen and paper with me at all times; so anytime somebody's asked me to do something, I'll always write it down because I don't trust my brain fog' (female, administration, 43yrs).

I've written into my contract that if I have any international travel – which I do probably three times a year – I would like business class ... if I had to fly normal and not be able to lie down and get in different positions and not be able to stretch out my hip during an international flight, I would not be able to perform whatever job I was going over there for (female, senior executive, 30 yrs).

Some participants developed strategies for asking colleagues to assist without having to disclose their condition:

Occasionally there might be a parcel or something that I have to get from a courier, so I'll just get one of the guys to pick it up, because I just say, 'I can't lift that'. But I don't necessarily have to explain why, I just play the female a little bit, saying, 'I need a strong man' (female, administration, 43 yrs).

Several participants expressed the importance of having a positive approach: 'a lot of it's to do with your mental attitude, just being strong mentally and just pushing through it' (male, tradesman, 41 yrs).

Positive thinking is quite powerful in this situation. I'm very determined and I've got a lot of inner strength, I can push the pain into the background to an extent. I'm quite conscientious, and I want to do a good job (female, administration, 69 yrs).

Participants used a range of strategies for distraction from pain, e.g. doing crosswords in their break, listening to music or interacting with people. However, participants found most commonly that concentrating on the work itself distracted from the pain: 'I like it when I'm a little bit busy because it distracts me from the pain' (female, administration, 69 yrs).

Often I'm working I'm completely absorbed in what I'm doing. So everything around me I don't notice. So that could be just part of the way I am if I'm focused on something ... I just don't think about it. When I'm working I'm really focused (female, senior executive, 54 yrs).

Work acted as a distracter and contributed positively to pain management: 'but if my mind is occupied, then the pain's not there. So being at work, concentrating, thinking of other people's issues and things, it has a substantial beneficial effect for me' (male, doctor, 51 yrs).

... distraction is a good remedy at times; that you find that if you're distracted thinking about work or talking to people, you think, oh, I didn't notice my pain, my back was sore. But then when you stop being distracted you feel it again. The distraction sometimes is a good thing (male, self-employed consultant, 69 yrs).

In terms of continuing employment, financial imperative was a key motivator for some participants. Several participants expressed concerns about financial viability in the absence of ongoing employment: 'I don't want to have to go on a Disability Support Pension. I don't want to have to live on whatever they get, a few hundred dollars a week' (female, administration, 58 yrs).

Several participants described the role of work in contributing to their identity and social inclusion: 'I have this fantasy if I win Lotto I might still keep coming here because there are some interesting people' (male, IT officer, 58 yrs). The social interaction component of work was particularly important for participants whose lives were adversely affected by their condition. As expressed by this participant: 'there's social interaction, though, which is quite valuable in the workplace. I'd become too much of a hermit otherwise' (male, lecturer, 49 yrs). Some participants relied on work for their social interaction. Many participants reinforced this view:

I've made some good friends at work, it gives the money to do things ... work is the one thing that keeps me going ... What people want most in life is usually a partner and children and I can't have those, so the next best thing is work (female, nurse, 41 yrs).

Additionally, many participants reported high levels of job satisfaction as a strong motivator to keep working: 'I like to work with people, I just love organising an event right through to being at the actual event. So, that's what keeps me going with it all. It definitely can be tiring but I push through' (female, marketing, 26 yrs).

I like feeling useful, I like being told that I'm doing a good job and I'm looking after our customers well, and all these kind of things. It's a real job satisfaction thing ... It's a real feeling of self-worth if you like, because when you have a lot of pain, sometimes you think – your self-worth just goes down a bit (female, administration, 69 yrs).

Condition disclosure at work

The issue of whether to disclose a persistent pain condition was contentious, and views on the subject were polarised. Some reported benefits from disclosing their condition, whilst others viewed it as disadvantageous. Participants tended to be happy to disclose their condition, or had made a conscious decision to avoid disclosure. Some had disclosed their condition incidentally not purposefully, e.g. a colleague noticed they were having some issues, or the participant told a manager who then informed another manager. A minority of participants had not disclosed to anyone at their workplace, almost half the participants had disclosed to everyone, and the remainder had disclosed to selected colleagues and/or managers (see Table 4).

Table 4: Disclosure status of interview participants

Disclosure status	N (%)
disclosed to everyone	15 (43)
disclosed to no-one	5 (14)
disclosed to selected few (supervisor/colleagues)	15 (43)

Open disclosure refers to situations where people had voluntarily disclosed their condition to the workplace (colleagues, supervisor or organisational level), usually facilitated by a good relationship with the workplace or with the expectation of a positive outcome:

... they basically said ‘We won’t spare any expense, team up with the person from HR, we’ll take you to a place that specialises in this top of the range office furniture and we’ll get you something really good’ and they did (male, lecturer, 32 yrs).

Because of the nature of my work and my disability is relevant to my work, I talk about it with my students and my colleagues and I let them know ... It’s actually much better for me to be able to speak up rather than keep it to myself and pretend it’s not there in front of other people ... then my employer has more opportunity to consider any additional supports (male, lecturer, 49 yrs).

Disclosure avoidance was reported by participants who expected to be discriminated against because of their condition, or who perceived no advantages in disclosing. Several participants had been subject to discrimination, such as this male:

... because I wouldn’t have got the role. I got knocked back a lot of times, as soon as you put down post injury, I know it’s supposed to be equal opportunity and they’re not allowed to do it, but I’m telling you, it clearly happens ... I don’t need them necessarily hanging over my head like well you know, they could just chop me tomorrow (male, store person, 34 yrs).

In some cases the discrimination was based on the employer’s fear of the employee submitting a worker’s compensation claim. A couple of participants had managed this potential discrimination by writing and signing a contract stating they would not lodge a worker’s compensation claim (in relation to their condition) at any stage in the future. The

manager of one participant had counter-signed the contract, stating that he would not disclose the condition to any future owners of the business:

I actually made him sign a document to say he would not use it against me or if he sold the company he would not divulge the information to another company, because I felt it would harm me, like if he did happen to sell the company, somebody came in and found that out they may not want you (female, administration, 58 yrs).

Other participants chose not to disclose:

I guess no one needs to know, as long as work gets done and I'm not taking huge, excessive sick leave or anything like that, I don't see that he would see a reason for it (female, health manager, 32 yrs).

A small number of participants chose not to disclose in order to avoid emotional challenges:

... it's been a difficult process because you have to come to terms with the fact that this is the case and I'm 26, I don't really want to admit what I can and can't do (female, marketing, 26 yrs).

Incidental disclosure is where employees disclosed their condition to a partial or full degree to the workplace because their symptoms were noticed by colleagues and they felt compelled to explain, they completed a pre-employment health condition form, they informed one manager who then informed other managers or they had to take extensive sick leave which required explanation:

That meeting was just to really bring it to their attention because they know – I had to have time off for that operation last year, so obviously I gave a bit of an explanation as to why that was the case ... I don't really want them to think that I'm just slacking off and not doing any work (female, health professional, 27 yrs).

Planning for work

Unlike the plans of employees without a persistent MSK condition, the future career plans of many participants take into account the constraints associated with their particular condition. The majority of participants expected their condition to worsen over time, resulting in a need to retire earlier than they had intended to.

In planning for their working future, participants discussed **upgrading skills** to increase options for work, changing jobs and reconsidering career options. Overall, participants valued more sedentary work in preference to physical work, and sought work which offered flexible working arrangements, e.g. freelance or online work, or work with a supportive employer.

One of the main impacts of conditions with persistent MSK pain is the impact on employment capacity. Almost half the participants stated they were unsure of their future work capacity. This was of particular concern for younger participants, who were at an early stage in their careers:

... for the last six months I've been thinking about resigning, more for the fact that I'm just – I'm so exhausted ... I guess I get nervous of the fact that I feel like I'm hitting a brick wall and I'm five years into my career (female, health professional, 27 yrs).

I imagine that I'll probably end up stopping work sooner than someone else, or at least I would want to ... So I think it will definitely impact my ability to work for a longer period of time (female, OHS consultant, 27 yrs).

Several participants recognised the importance of **further training or education** to expand their future employment and career options:

I am going to get further training, and try and get into a less physical role in my job ... into hopefully a supervisory role ... I've just got to get the next certificate up from what I've got, which is the cert 4, and I'll be able to work as a Team Leader (male, nurse assistant, 29 yrs).

I've just got to keep pursuing the office role ... I do these courses and that so I make myself, you know, you give the archer the bow and arrow so to speak ... Just keep doing courses, just keep trying to make the right connections to go where I can be as productive as anyone else, without causing more injuries basically (male, store person, 34 yrs).

Despite acknowledging the benefit of further training and career diversification, some participants' ability to undertake these opportunities were limited by their condition:

I'd like to branch off and there's a job where nurses can teach, they're called Division Two or EN nurses, and I'd like to do that long-term because it would be physically easier on me ... you've got to do a Certificate 4 in training or something or other first, and I just don't have it in me (female, nurse, 41 yrs).

Despite the limitations imposed by their conditions, most participants maintained an optimistic view of their future working life:

I could work a bit less, maybe part-time if I found I needed more time for rehabilitation or doing something, but at the moment I don't think it would – for the time being it won't affect my ability to work full-time (male, consultant, 69 yrs).

I do – as long as I can, I think I will... I do enjoy the role ... Before it was very much – I wanted to conquer the world but now I'm – I would never have said before that I'm happy to stay where I am (female, health manager, 32 yrs).

4. Discussion

The study addressed four key research questions, which are discussed below.

1. What are the barriers and enablers to maintaining productive employment for people with persistent musculoskeletal pain?

The present study found barriers to working productively included organisational factors, the physical environment of the workplace, and personal limitations. Organisational factors had the greatest impact on working productively. Of these factors, a lack of organisational support and strained relationships between participants and co-workers were more likely to have negative impacts than other factors. Closely linked to these was the issue of disclosure: if a participant did not have a good relationship with their employer, they were less likely to disclose and therefore less likely to access job modifications. This supports the work of others (Gignac, 2005).

Organisational support was a critical enabler to maintaining employment. Of key importance is the role of a supportive supervisor and manager who allow employees to control their work routine including hours and times of work. Having control over their work organisation was pivotal in enabling individuals to continue working; this finding is consistent with those of other studies (Byrne & Hochwarter, 2006; de Vries, Reneman, Groothoff, Geertzen, & Brouwer, 2012; Munir, Jones, et al., 2005).

Several participants in the current study raised the issue of discrimination due to employers' or potential employers' perceptions that employees with persistent pain conditions are a financial liability for the employer because of the potential impact of compensation claims on insurance premiums and lost work time. This is a significant barrier that has not, to our knowledge, previously been described in the literature relating to persistent MSK pain. To manage this issue several participants had developed contractual arrangements whereby they agreed not to lodge a claim whilst employed. This arrangement is legally invalid as employees are not able to sign away their common law rights to lodge a worker's compensation claim. The separation of work and non-work injuries which is part of the Australian system as compared to many of the European countries where compensation is not dependent on the work-related nature of the injury is a probable explanation for this issue.

2. What types of coping strategies are people with persistent musculoskeletal pain using to maintain employment?

A range of coping strategies was utilised by participants to help them maintain their productivity at work: changing the nature of their work, taking regular breaks, accessing flexible work hours (changing start or finish times), working longer when well, enlisting support from colleagues, modifying the work environment and adjusting the work routine. These strategies were also identified by Gignac (2005) who examined the coping strategies used by individuals with osteoarthritis and rheumatoid arthritis. In that study the behaviours were categorised into adjustment of time, help from others, modification to activities and anticipatory coping. Some participants had limited opportunities to adopt

these coping strategies due to the nature of their work. Only two participants in the current study were employed in jobs with high levels of manual labour, but both identified significant challenges with their work and expected to need to change to less physically oriented work.

Changing the nature of work through seeking alternative employment was identified by participants as a strategy to manage their condition, usually through retraining or further education. The main impetus for changing the nature of work was seeking improved workplace conditions, so they could work in environments better matched to their particular condition. This strategy has been noted by others such as Shanahan et al. (2008) who reported that employees with arthritic conditions used job change to maintain employment.

Job control is pivotal to individuals with persistent pain, and enables them to develop a range of effective coping strategies to manage their employment. Roles with higher levels of seniority were associated with greater control. However, a paradox was noted – career progression can be limited due to restrictions on the type of work being undertaken by those with persistent pain conditions.

3. What workplace supports are needed for people with persistent musculoskeletal pain in maintaining productive employment and how should these supports be implemented, provided or communicated to employees?

The most instrumental workplace support for employees with persistent MSK pain is the provision of flexible working hours and routines. All participants expressed the view that flexible hours were advantageous in maintaining productive employment. Additionally, some participants were able to access ergonomic workstation assessments, which they found helpful. A systematic review by van Oostrum et al. (2009) examined the effectiveness of workplace interventions on work-related and health outcomes across six studies. The interventions included changes in workplace/equipment and changes in work design/conditions/environment, and they involved the worker, employer and health professional. Findings from the study concluded there was a moderate level of evidence for the effectiveness of workplace interventions in reducing sickness absence. Palmer et al. (2012) included 42 studies in a systematic review of community and workplace-based interventions aimed at reducing MSK-related sickness absence and job loss. The interventions involved exercise therapy, behavioural change techniques, workplace adaptations (including job modifications) and provision of additional services. Most of the studies found that the intervention had a small positive effect on job loss and sickness absence but that there was no significant difference between the types of intervention.

Although a range of workplace supports were raised by participants, and evidence supports the benefit of workplace supports/interventions, the implementation of workplace supports is complex. Many participants were concerned that accessing workplace supports would single them out as being a liability to the work team or organisation; this was closely linked to the issue of disclosure. An optimal solution would include inclusive strategies applicable to all employees regardless of whether they had a chronic condition. Several participants were able to access inclusive strategies in their workplace without having to disclose, e.g.

flexible work hours, ergonomic assessments/workstation modifications. Those participants were employed in predominantly larger organisations with well-developed risk-management processes.

4. Are other, non-workplace supports needed to assist people with persistent musculoskeletal pain to maintain productive employment?

The most effective non-workplace support was an appropriate medication regime for pain and management of symptoms. Other than pain medication, participants used a range of other non-workplace supports, which included exercise/hydrotherapy, support groups and home help (from either family or friends). In addition to the findings of this study, Gignac (2005) reported that employees with arthritis reduced social activities to reserve energy for their work, and travelled only with others so they had assistance with luggage.

Some gaps were identified in the availability of non-workplace supports. These included the availability of appropriate exercise classes after work hours as most were offered during business hours, a support group that was workplace-oriented and focused on strategies for staying at work, and access to help with household tasks to ensure adequate rest between work days.

5. Recommendations for translation into policy and practice

A range of recommendations has been developed from the current study, targeted at the organisational, community and individual levels.

Organisational level

5.1 *Communicate with employer*

- Educate employers on the advantages of accommodating employees with persistent MSK pain and the likely improvements in productivity in doing so.
- Encourage employers to implement inclusive strategies for all employees to have access to accommodations or job modifications without having to disclose their condition, e.g. flexible work hours, option to work from home, 48/52 leave provisions, ergonomic assessments.
- Educate employers on their legal responsibilities regarding discrimination and employment, e.g. discrimination on the basis of potential workers' compensation claims, obligations to accommodate employees with disabilities (Occupational Health and Safety Act 2004, Workplace Injury Rehabilitation and Compensation Act 2013)
- Raise awareness of the personal and human capital impacts associated with persistent pain and the role of work in minimising these impacts

5.2 *Access to providers who specialise in making recommendations regarding workplace accommodations*

- Develop a database of professionals with expertise in organisation of the work environment, e.g. ergonomists, specialised occupational therapists or physiotherapists.

5.3 *Development of best practice case studies and education/advocacy resources*

- A number of employers have very successful strategies in place for making accommodations to facilitate productive employment. These could be developed as case studies on the A&OV website and assist other organisations seeking advice.

Community level

5.4 *Increasing public awareness of conditions that result in persistent pain*

- Awareness-raising days, e.g. R U Ok? Day, similar to other chronic disease awareness days.
- Workplace seminars/presentations on conditions resulting in persistent pain.
- Increased publicity of A&OV resources, including information on arthritic conditions and persistent MSK pain and inclusion of information on preventative activities

Individual level

5.5 *Career planning*

- Access to career advisers who can assist with developing career plans for people with persistent pain conditions. In particular, taking into account developing a plan to develop a range of skills so that career plans can be modified depending on the progression of an individual's particular condition

5.6 *Employee support around the area of disclosure*

- Access to advocates who can advise or assist employees in the area of disclosure of their condition, e.g. workplace visit to accompany employees if they choose to disclose.

Availability of exercise classes and contemporary pain education/management

- Offer exercise and therapy classes outside work hours so that employed people with MSK pain can attend.
- Offer pain education sessions to employees and employers that adopts a contemporary approach to understanding and managing persistent musculoskeletal pain.

5.8 *Personal support*

- Access to support groups dedicated to maintaining employment, covering issues related to dealing with workplace issues and developing strategies for career management.

6. Summary of findings

This study has described the varied experiences of a sample of Australian employees working with persistent MSK pain and explored some key themes around the interface of productivity with employment and persistent MSK pain conditions. Most of the participants were working with some level of disability caused by their condition, which impacted on their productivity. Many participants experienced personal or organisational barriers to maintaining productive employment, which were mediated, to some degree, by supportive workplaces or personal coping strategies.

Several barriers to maintaining productive employment were identified, with organisational barriers being of critical importance. The ability to control work routine and hours, such as taking breaks and varying start/finish times, was widely quoted as assisting participants to maintain employment.

The issue of disclosure was explored in this study and somewhat contentious, participants expressed a range of views both positive and negative. Disclosure was perceived as an opportunity to gain organisational support and but also as a potential avenue for discrimination.

Many participants faced an uncertain employment future due to the unpredictable nature of their condition. To address this issue, some participants were in the process of considering retraining, a change in job or moving into a new field, which improved the matched to their condition.

A range of recommendations has been developed, based on findings from the study. Recommendations were considered at a range of levels: organisational, community and individual. Organisational-level interventions are aimed at education of employers on the provision of workplace accommodations and legal obligations concerning discrimination. At the community level interventions involve raising awareness of the impact of conditions resulting in persistent pain and finally, at the individual level, by providing support to employees with advocacy and resources.

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