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Gender, Cultural Influences, and Coping with Musculoskeletal Pain at Work: The Experience of Malaysian Female Office Workers

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Abstract *Purpose* Workers with musculoskeletal pain (MSP) often continue to work despite their condition. Understanding the factors that enable them to remain at work provides insights into the development of appropriate workplace accommodations. This qualitative study aims to explore the strategies utilised by female Malaysian office workers with MSP to maintain productive employment. *Methods* A qualitative approach using thematic analysis was used. Individual semi-structured interviews were conducted with 13 female Malaysian office workers with MSP. Initial codes were identified and refined through iterative discussion to further develop the emerging codes and modify the coding framework. A further stage of coding was undertaken to eliminate redundant codes and establish analytic connections between distinct themes. *Results* Two major themes were identified: managing the demands of work and maintaining employment with persistent musculoskeletal pain. Participants reported developing strategies to assist them to remain at work, but most focused on individually initiated adaptations or peer support, rather than systemic changes to work systems or practices. A combination of the patriarchal and hierarchical cultural occupational context emerged as a critical factor in the finding of individual or peer based adaptations rather than organizational accommodations. *Conclusions* It is recommended that supervisors be educated in the benefits of maintaining and retaining employees with MSP, and encouraged to challenge cultural norms and develop appropriate flexible workplace accommodations through consultation and negotiation with these workers.

Keywords Musculoskeletal pain · Qualitative · Malaysia · Office workers · Female

Introduction

Musculoskeletal pain (MSP) is a significant workplace issue resulting in reduced productivity and performance at work, sickness absence and potential long-term incapacity [1, 2]. MSP is defined as subjective reports of work or non-work related discomfort during the last 6 months [3, 4]. Previous research has shown that working through perceived pain is a risk factor associated with MSD discomfort, influenced by work organizational factors, social culture and religious beliefs [3]. Whilst many individuals stay at work with persistent MSP, the factors that differentiate this group from those who leave work, either temporarily or permanently, have received less attention [5]. Managing MSP in the workplace is complex and the availability of support had been shown in previous studies of other worker groups as determined by the overall societal context and work system in which both the workers and the organisation are operating [5, 6]. These contextual factors will vary between countries [7, 8] and need to be carefully considered in the development of guidelines for organizations to support the provision of appropriate workplace accommodations to assist those individuals with MSP to stay at work. In particular, little is known about the strategies used by these workers to manage productive

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employment with MSP in countries where strong hierarchically-based organizational systems are prevalent.

The way an individual copes with MSP is highly varied [9] and strongly influenced by the socio-cultural characteristics of the society in which they live and work [10, 11]. In some cultures individuals are more likely be open about their pain, whilst others conceal their pain and emotions [11, 12]. Gender differences also exist in the prevalence and management of MSP [13]. Women have been reported as having a higher prevalence of MSP [14], and to report greater pain-related disability, seeking medical care more often than men [8]. Patterns of pain distribution also differ by gender, with women more likely to report upper limb symptoms [15] and men low back pain [6]. Asian socio-cultural influences on workers with pain have been found to vary from those of western workers [16, 17] and also to differ between genders [11, 12]. A large study of Taiwanese workers found job content, lack of career prospects, and job organizational problems, were important risk factors for women with self-reported MSP working in public administration roles [18]. Zakerian and Subramaniam [19] found psychosocial work factors associated with work stress and MSDs in a Malaysian office based population included job demands, lack of job control, social support and negative social interactions. The authors had previously reported that being female, having lower levels of work-life balance and poorer mental health levels, and being exposed to high physical demands were predictors of MSP [3].

Malaysian society is hierarchical and values distinct roles with a large power distance between those with and without power (e.g. the supervisor and the worker) [20]. Direct discussion or consultation with supervisors is neither expected nor valued, with employees more likely to confide in colleagues than those in more senior roles than themselves. Furthermore, Malaysia is a patriarchal society, where males are more often in the position of leadership and women are working in jobs with low control or autonomy [21]. Participation of Malaysian females in the work force is high at 53.6 % [22], and despite working full-time employed women is also expected to manage the majority of home duties, potentially exposing them to additional and different hazards and risks than their male peers [23]. The availability of organisational support or services such as flexible work hours or formal childcare, to assist with managing the demands of dual work and home roles is limited. This is considered as a risk factor for taking time off work [24].

Workplace organizational accommodations have been identified as an effective strategy to assist those with MSP to remain at work and return to work following injury [25]. However, the successful development and implementation of such strategies requires consultation between supervisors and employees [26, 27]. In a country such as Malaysia where this type of discussion is rare, challenges exist for those with conditions that might benefit from the provision of workplace accommodations. In particular, Malaysian women with MSP are vulnerable as they are more likely than their male colleagues to be working in jobs over which they have little control, and therefore limited opportunity to make changes to their workplace conditions [28, 29]. Little is known about the strategies used by Malaysian women with MSP to stay at work. A qualitative research approach was used for the present study as it enables exploration of this gap through the voices of the individual experiences of those working with MSP. This has not been examined in Malaysia, particularly among working women with MSP. It is important to understand the experiences of these women, not only the factors that motivated them to continue, but also strategies that they employed to maintain their employment. Therefore, the aim of this study is explore the experience of Malaysian women working with MSP and the strategies they currently used to maintain productive employment.

Subjects and Methods

Study Design

A qualitative method was used to enable a deeper exploration of issues raised in a previous survey of Malaysian office workers about MSP [3]. A literature review informed the development of the guided interview framework, which was modified iteratively during the project [30]. Thematic analysis was used to identify, sort, analyse and report patterns within the data [31].

Subjects

Two organisations in the Malaysian public service participated in an initial survey relating to musculoskeletal pain [3]. Four hundred and seventeen office workers comprising 333 females and 84 males, participated in the survey. Subsequently survey respondents were invited to participate in a follow up interview. Twenty-five female office workers with MSP expressed interest in being interviewed by providing contact details, but only 18 of these could be contacted, and of those 13 agreed to participate. Most of the five non-responders reported the lack of time and/or interest, to participate in the subsequent interview study. Verbal consent was obtained via telephone and an interview arranged at their workplace. Written consent was provided at interview commencement and participants provided basic demographic data and their job title (see Table 1). The participants were lower ranked public sector

Table 1 Characteristics of participants

Participant no.	Age	Occupation	Length of service in the organization (in years)	Length of time in this role in employment (in years)
1	45	IT technician	14	21
2	38	IT technician	12	12
3	33	IT technician	7	10
4	35	Clerical/finance	4	4
5	36	Clerical/operation	3	7
6	58	Clerical/operation	2	30
7	52	Chief clerk	4	17
8	58	Clerical/operation	32	32
9	37	Assistant accountant	6	6
10	35	Assistant accountant	5	5
11	34	Clerical/operation	5	7
12	35	Psychology officer	3	3
13	33	Clerical/operation	7 months	3

employees from various types of occupations such as IT technician, clerical workers (finance and operation division), assistant accountant and psychology officer. Ethics approval was obtained from the La Trobe University Human Ethics Committee (FHEC12/092).

Data Collection and Analysis

All interviews were conducted in Malay by the first author (IM) with the presence of a female research assistant for note taking. The guided interview framework covered the following questions: (1) What are the challenges/problems that you experience in managing the demands of work?; (2) What type of strategies do you use to manage these demands at work?; and (3) What factors motivate you to stay at work despite having muscular aches and pains? Interviews lasted 45–60 min, were audio-recorded and then transcribed verbatim by an independent transcriber.

All interview transcriptions (in Malay) were read, verified, and corrected by the first author [IM] against the original audio for accuracy and grammar twice, first in Malay and then in English. The translated texts (in English) were compared to Malay transcripts to ensure correct interpretation of the data. Data were imported into NVivo software (QSR International Pty Ltd. Version 10), for data management and analysis.

The interview data were classified and coded into tentative emerging themes and a basic framework. Two interviews were coded independently by two of the authors, and an iterative discussion used to further develop the emerging codes and modify the coding framework. A further stage of coding was undertaken to eliminate redundant codes and establish analytic connections between distinct themes [31].

Results

Several themes emerged following analysis of the transcribed interviews. Two major themes were identified: *managing the demands* of work and *maintaining employment with persistent musculoskeletal pain*. Figures 1 and 2 outlines the themes and subthemes developed, which are then described in more detail with supporting quotations from the participants.

Main Theme: Managing the Demands of Work

The main theme, *managing demands of work*, described the challenges experienced by participants in meeting their work demands. This comprised two main sub themes, these being related to the challenges of the demands of the actual work and tasks, (with further sub-themes related to communication and workload), and the quality and quantity of the resources and support available to enable the individual. These themes and their subthemes are illustrated in Fig. 1 discussed in more detail below. (See Fig. 1 "Theme and subthemes for managing the demands of work").

Sub-theme: Challenges in Meeting the Demands of Work

Inadequate Communication

Inadequate communication refers to the lack of face-to-face meetings and inadequate instruction/information sharing between workers (participants) and their supervisors. Both quality and quantity of communication between participants and their supervisors was reported as a barrier to participants meeting their work demands. Participants reported that they felt unable to complete their work to a satisfactory standard due to the lack of information provided to assist them with the decision making required for this to happen. Participants expressed frustration with an over reliance on nonverbal forms of communication such as email, and other web based products to transfer information rather than verbally, face to face or by telephone.

> "We communicate through 'WhatsApp', 'email'… there is no chance to communicate face to face. When the boss gives work and says…"I need this urgent"

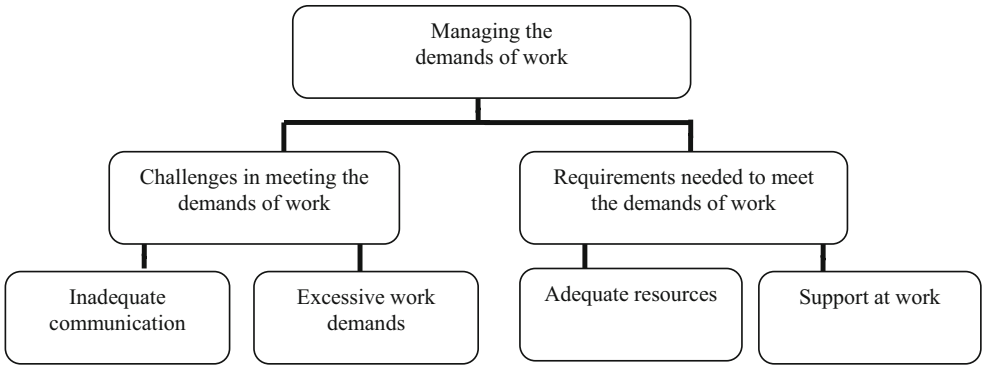

Fig. 1 Theme and subthemes for managing the demands of work

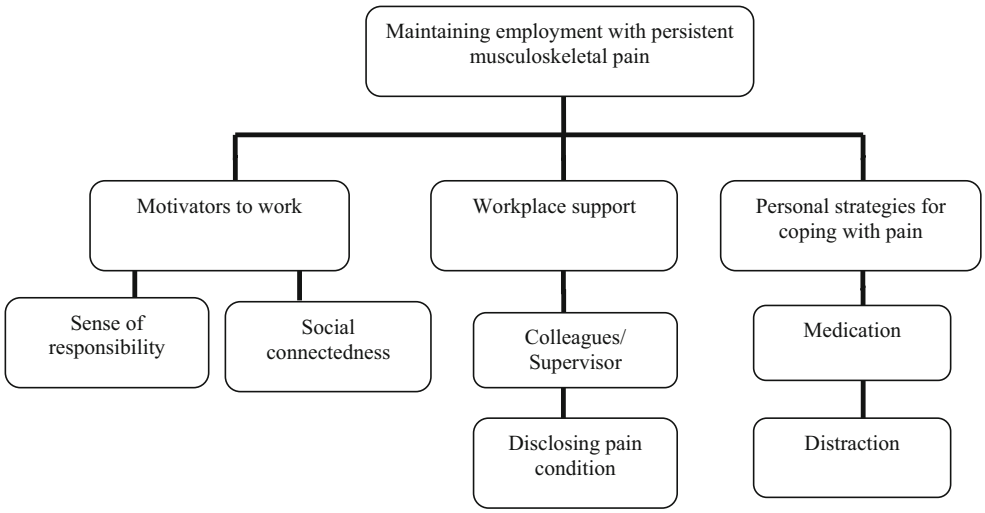

Fig. 2 Theme and sub-theme for maintaining employment with persistent musculoskeletal pain

> …we don't have enough information on that particular job…which makes it difficult for us" (P10).

Short deadlines compounded communication problems as participants reported having limited time to search for necessary information: "They want certain information in a short time frame…to obtain that information in a short amount of time is a bit of a struggle, a little difficult…and affect our job too" (P12).

Excessive Work Demands

Participants reported excessive work demands as a challenge. In this study, excessive work demands are related to deadline pressures and heavy workloads. Short deadlines and the quantity of work contributed to the reported high work demands. Some participants felt so overwhelmed they lacked motivation to finish tasks, reporting work piling up, becoming disorganised, and difficulties in prioritising what needed to be done.

> "There are piles and piles of work…duties pile up and it makes it hard for me to finish the work. It is too much. My work becomes haywire and disorganized…I have to finish it because it all has deadlines" (P11).

Insufficient numbers of personnel also contributed to the challenge of meeting their work demands, "After all, there is only one person. If that [person] is on leave, really I am alone doing everything. Otherwise we cooperate with the work….It is really hard to ask for help" (P13).

Sub-theme: Requirements Needed to Meet the Demands of Work

Adequate Resources

Participants reported the need for adequate resources, including equipment, systems and people. Whilst some discussed the issues with poorly functioning equipment,

others focused on systems which they felt did not support efficient work practices; "we should have a systematic filling system. Because now, it is all over the place…all the files then…it does not have a system" (P11). In contrast, some described satisfactory equipment but insufficient numbers of personnel to get work finished.

> "The equipment is ok. What is important is that there must be a person upstairs for me to refer things to. From the angle of identifying which file goes to where. So they were tell me "this file put here"…He or she would have the expertise then" (P6).

Support at Work

Colleagues and some supervisors provided support in managing work demands. Coworkers were able to assist when work demands increased or difficult issues arose and provided a cohesive team environment considered by participants as an important aspect of work: "So far everything is ok, praise be to God, I have ok (good) teamwork, and everyone gives their support. Praise be to God, they help me a lot" (P9). Collegiality was described as a strategy to manage the demands of the supervisor: "with the colleagues, how do I say it, we work together, we know what the supervisor wants, I will sit with my colleagues and we will discuss" (P12).

Supervisor support was described differently and related to providing opinions on how to solve problems or provide an authoritative view when challenges arose, as outlined by this participant.

> "It is ok as there is no problem there, [the supervisor] always gives me support. Examples of support, I can refer to them to ask for opinion. If I feel I am not qualified to query people via email according to the post level, even though it is my job, I will ask my supervisor to shoot that email" (P9).

The supervisor was considered an expert, someone to whom difficult problems could be referred to for clarification.

> "The supervisor? For example, there certain things that I do not understand, I will refer to my supervisor, I will get assurance of what he exactly wants, what we are to look for, if we refer to the supervisor we will think about it. Another thing is that it wastes time if we do not refer to the supervisor" (P12).

However, not all participants reported having supportive supervisors as evidenced by this participant, "He does not support that, he just issues orders only". (P8). Some expressed their frustration at the lack of participation by the supervisor.

> "He gives the work. We are the ones who have to find the solution as we are the ones who have the knowledge. He enquires. If we have a problem we will not ask him. He is not involved in coding. He is the forefront of the diagram or flowchart. So the supervisor is of little help" (P2).

Main Theme: Maintaining Employment with Persistent Musculoskeletal Pain

The theme *maintaining employment with persistent musculoskeletal pain* describes factors related to the maintenance of productive employment whilst having persistent musculoskeletal pain. Participants described a range of factors that motivated them to remain productively employed and included having a sense of responsibility and work providing social connectedness. Figure 2 outlines the main theme and subthemes for maintaining employment with persistent musculoskeletal pain.

Sub-theme: Motivators to Work

Sense of Responsibility

Most participants described having a strong sense of responsibility to their work and family, which motivated them to continue work despite their MSP. Active participation in the workforce was considered a responsibility to society, the family, and towards religious obligations.

> "Yes, as they say, whatever work we are doing, the work must go on. Responsibility. And financial work involves a lot of deadlines. So we have to do it. After that, if I do not work, I can't just sit and do nothing" (P10).

Responsibility to family was a strong motivator for participants to continue working, particularly as a mother; "I feel that it is maybe the responsibility as a mother. I think that is it. Normally we as females are mother, so the main motivating factor to keep working is the family" (P12). In addition, work was considered as a meaningful activity to occupy one's time.

> "My responsibility to family if I sit at home I have nothing to do. If I retired early, what I am going to do at home that is what my children keep asking me. After my children have finished their studies and I no longer have any responsibilities then I will retire" (P7).

Participants identified the fulfillment of religious obligations as an important factor in maintaining employment; "There are those who feel a sense of responsibility—work

as religious responsibility. If we don't consider it like that we will not have a vision. Whatever work we do we must have a vision" (P8).

Social Connectedness

Participants reported that the work environment generated social contacts and this was an important part of managing pain. The social aspects of work provided enjoyment and this distracted participants from their pain, as indicated here; "It is enjoyable to work. The working environment, colleagues, good supervisor, so I enjoy coming to work" (P3).

Sub-theme: Workplace Support

Workplace support was provided by both colleagues and supervisors but expectations of each were expressed quite differently.

Colleagues Support

Various forms of assistance was provided such as peers completing others' work so that they could then attend medical appointments, or helping them with physical aspects of work or other tasks when they were experiencing increased pain levels, such as in this case: "My colleagues know about the pain and do not pressure me when I am in pain" (P2). Another participant describes how her colleagues assist her when she is absent:

> "They give me space, for example they give me leeway, if I want to go to hospital, and they will release me for me to go. For example, if I am not at office they will take over my duties" (P8).

Assistance in managing physical loads was important for some participants: "for example when I need a file they go get it for me. Yes, they help to carry the heavy files; they help you in your work then" (P11).

Supervisor Support

Some participants reported supervisors providing good support:

> "The supervisor understands that if we want to take a break for a while, he understands. There is no problem, if we want to leave to go to the pantry to make a drink for a while. Supervisor gave some flexibility" (P12).

However, many others reported a lack of support from their supervisor, and managed their condition independently: "Do it myself I guess…myself only, there are no friends or boss who can help. If I am in pain, I have to be smart to complete my work" (P1).

Other strategies used by participants to assist them in managing their condition included the delegation of duties to colleagues, provision of therapies such as a massage machine or exercise classes and reflexology, and the use of spirituality.

> "The reflexology corner is to release stress, and the fishpond is on the fifth floor, then every Tuesday there is a cycling class. I am the section representative, so I feel there are also a lot of things being done. They have sponsored a lot of events for… spirituality" (P9).

Disclosing the Pain Condition

Participants were more likely to disclose their condition to colleagues rather than their supervisors. If colleagues were informed about their condition they could support them, providing assistance at work. Participants were reluctant to disclose having MSP to their supervisors, feeling uncomfortable sharing information about their condition: "It is seldom that we speak to the supervisor as we seldom meet them. Even if I meet them to report on work, it is not that I talk about my aches and pains" (P2). Disclosure to work colleagues was more widely reported, and generally happened as participants felt they needed support to manage their condition. However, the supervisor was not typically viewed as a resource for supporting participants at work.

Sub-theme: Personal Strategies for Coping with Pain

Medication

A range of pharmaceutical and traditional medications were used by participants to manage their MSP. Medication usage varied but the effects on the individual and their ability to work were highly individual. Some used pharmaceutical medications supplemented by herbal medication: "the doctor gives nerve medication and medication to apply. The medication is effective…Sometimes I wear salonpas. I buy it myself" (P2). Others preferred herbal medicines, "I take jamu-herbal medicine. It might be the wind, I guess, because after that I felt lighter." (P11).

Distraction

A range of activities were described by individuals to provide distraction from their pain, these included massage, ignoring the pain, using activities such as work, taking a break and regular movement: "I will get out from

the place…I will get out of my seat and chat with others, after that I will come back and continue" (P5).

Several participants described the use of spiritual strategies as providing distraction, including listening to recordings of the Quran to manage pain: "I will listen to reading of the Al-Quran. I will sit and relax then turn on the Al-Quran and sit and forget all for a while" (P5). Others used the morning bath, and ruku' (bowing/prostration):

> "For my back pain I did ruku' (bowing/prostration). Praise be to God it worked. I went for a course in the Science of Solat. They said the way we move makes us healthy so after that I tried it. I had a back pain and I did that Praise be to God, it worked" (P1).

Sample Quality and Quantity

Of the initial group of 18 survey respondents who could be contacted, the convenience sample consisted of the 13 participants who agreed to be interviewed. Table 2 illustrates the development of the 10 identified themes from the individual participant interviews, and the participant contribution to thematic saturation. While the sample size was limited by the available respondents it is argued that data saturation had been reached with the available sample group, as new data was no longer bringing additional insights to the research questions [32].

Discussion

This study gives a voice to Malaysian women with musculoskeletal pain working in a public sector office environment. The women who participated in the study were a varied group, ranging from four participants who were older and have more years of working experience, compared to the others (n = 9) were in their 30 s. In addition they are from various types of administrative, technical and clerical occupations. Work was of high importance to these women who reported a strong sense of responsibility in contributing to their family and society through their workforce participation. A range of challenges were reported by the women in maintaining their workload along with their MSP, and many had developed a range of personal strategies to enable them to remain productively employed. A common theme across all work-roles was low levels of control in how their work was allocated, and limited opportunities to make decisions independently due to the hierarchical structure of the work organisation.

Disclosure of health conditions such as MSP is a challenging and complex decision with potentially negative consequences [33]. On the one hand, disclosure is required to develop appropriate workplace accommodations; however, this can result in stigma and discriminatory work practices [34]. Despite the long term nature of their condition, only 4 women reported informing their supervisors of their MSP, suggesting the difficulty most had communicating effectively with their superiors. In Malaysia, a strong hierarchical structure is evident along with a reluctance to discuss matters of a personal nature with those more senior, therefore disclosure of MSP is unlikely. The patriarchal nature of Malaysian society [23] is an additional disincentive for women to report their condition and negotiate for appropriate workplace accommodations. One possible reason women in this study did not disclose their condition to supervisors is the influence of the need to avoid the '*malu*' (ashamed/embarrassed) and '*segan*' (reluctant) personality which are akin to hypersensitivity to what other people are thinking about one's self [35]. This has a strong influence on communication in Malaysian workplaces, particularly between a superior and subordinate [36]. In addition, Malaysian women and particularly those who are Malay, are generally less open, less expressive, more inhibited, and timid than their western counterparts [37]. A strong culture of adherence to the rules and norms of society which respects the avoidance of criticism or disagreement, is a likely contributor to a reluctance to disclose personal conditions to one's supervisor.

Without disclosure and organizational support, workplace adaptations need to be developed at an individual or peer related level. Rather than rely on supervisory support, women were much more likely to manage their workplace situation by negotiating support from their colleagues. Colleagues support included listening, helping to complete work to meet deadlines and undertaking extra duties when required, demonstrating the collective nature of Malaysian society which values long-term commitment to the 'member" group and responsibility for fellow members of the group [36]. Prioritisation of group benefits over individual benefits, has been identified as a characteristic of collective societies [38], and is evidenced by the actions of these women through their expectations of and acceptance of assistance from their fellow workers.

Supervisors were approached for support regarding work-related matters, where decisions required senior input, but not for personal matters. In the context of group membership, supervisors were considered at a different level and expectations of support were different to that of colleagues. This is consistent with an acceptance of a power distance in Malaysia which embraces a respect for authority and hierarchical differences [36]. Munir et al. [39] found only 50 % of those with chronic health conditions had disclosed to management suggesting that supervisors were not considered to be the right person to know about their condition. Previous studies in developed

Table 2 Participant contribution to thematic saturation

Participant no.	Meeting the demands of work				Maintaining employment with persistent musculoskeletal pain					
	Challenges in meeting the demands of work		Requirements needed to meet the demands of work		Motivators to work		Workplace support		Personal strategies for coping with pain	
	Inadequate communication	Excessive work demands	Adequate resources	Support at work	Sense of responsibility	Social connectedness	Colleagues/ Supervisors	Disclosing pain condition	Medication	Distraction
1	x	x	x	x	x		x		x	x
2			x	x	x		x	x	x	x
3		x	x			x			x	
4	x			x	x		x		x	x
5		x			x			x		x
6		x	x	x		x			x	x
7	x				x					x
8		x	x	x	x	x	x	x		
9				x			x		x	x
10	x				x		x			x
11		x	x	x	x		x		x	x
12	x	x		x	x		x			x
13		x		x			x	x	x	

countries reported that employees did not disclose their condition due to the possibility of being seen as fraudulent [33] and perceived themselves as responsible for managing their own condition at work [40]. However, in our study it was found that it is very unlikely for the women to disclose their condition due to the power distance between supervisors and subordinates [35, 36]. This suggests that employers, and particularly supervisors, need to be aware of the reasons influencing subordinates' reluctance to disclose their condition, and develop strategies to provide greater opportunities for supporting openness [33].

Contemporary pain management strategies support the use of both organisational and individual strategies to maximise work potential for those with ongoing pain, such as MSP. However, these injury management strategies require organisations to identify, assess and control risks and hazards which cause or aggravate conditions such as MSP, to assist towards workforce stability and productivity [2, 41]. Contemporary approaches to sustainable control strategies also emphasise the necessity for organisational accommodations rather than individual worker adaptations [42, 43]. This study did not identify any supportive organisational or systemic changes to the work environment to assist staff working with MSP, rather women identified and managed workplace changes individually. None of the women interviewed had requested a change in work hours or organisation, feeling they must use self-management techniques to manage their symptoms. The use of individual strategies, such as religious beliefs in preference to requesting systemic workplace changes, has been identified previously by Idris et al. [44] in relation to managing stress at work, not MSP. The use of spiritual strategies to manage MSP offers potential insights into cultural distinctions between East and West and the relative importance of religion more generally. There had been little described in the occupational health literature about the use of religious-based strategies to assist where culturally appropriate.

Some significant cultural barriers exist in the development of strategies to assist those with MSP to remain productively employed. Workplace modifications require both effective consultation and communication with all workers, neither of which are currently embedded in Malaysian workplace culture. The important role of management in developing an effective workplace culture towards employee health and well-being previously described [27, 41]. However marked differences exist between societies, and individual expectations of the type and level of support provided by workplaces [45, 46], compounded in this study by the intersection of leadership and cultural beliefs.

In Malaysia, workplace risk management practices to accommodate workers with health problems such as MSP or stress related disorders are not well developed [44]. As we found, supervisors have not been provided with education on the management of workers with MSP or other health conditions. Even in countries such as Australia with a strong regulatory focus on health and safety at work, supervisor knowledge on managing employees with health conditions is highly variable [47]. Supervisors require support and training to be able to appropriately manage employees. As noted above, communication and consultation is an integral part of managing employees who may need workplace modification to continue productive employment, a particular challenge in the contemporary Malaysian context.

Strengths and Limitations of the Study

The use of qualitative research provided the basis for the significant strength of this study to gain personal insights into the experience of managing MSP at work with Malaysian women, a population seldom 'given a voice' in this context. In addition, the use of a convenience sample with a smaller number of participants enabled the collection of more in-depth perceptions and richer data, which would not have been possible using quantitative methods. Despite this, some limitations exist. The interviews were conducted by a male interviewer which may have influenced the women's responses, however, the interviews were conducted in Malay by a Malay speaker which should have minimized any potential misunderstanding between interviewer and participants. Only women with MSP currently working were included in this study, so further research could engage those who had not managed to sustain productive employment. Nevertheless, the information collected provides valuable information from an 'under-represented' group of workers seldom investigated in the literature.

Conclusions

In order to manage the demands of work, various challenges were experienced by women with MSP in this study. These challenges were reported to hinder work completion and contributed to their stress and pressure while working with pain. Various factors were also reported to motivate women with MSP to continue working. In addition, a range of strategies were employed by these women to maintain productive employment, despite having musculoskeletal pain. However, most strategies were instigated by the women at an individual level with minimal evidence of systematic changes to the work or work environment.

This study provides preliminary insights into the relationship between work, health and environment for women

with MSP. It demonstrates that significant challenges exist that need further exploration so that culturally specific policy and guidelines can be developed to improve support for those managing MSP at work. To explore these important workplace issues further in-depth research is required with samples in a range of employment situations. In addition, it would be of benefit to explore the views of supervisors to ascertain their opinions on what is required to ensure the needs of employees with MSP are met.

The effectiveness of workplace accommodations cannot be assessed in the Malaysian context until they have been systematically implemented. In the meantime, Malaysian women are continuing to work despite their musculoskeletal pain using strategies which are unlikely to be either effective or sustainable—a situation which is unlikely to benefit either these workers or their employers.

The findings of this study suggest the need for education for supervisors and management in the benefits of maintaining and retaining valuable employee assets, including those with MSP, through consultation and negotiation in which all stakeholders have a voice, towards the development of appropriate flexible workplace accommodations.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval Ethics approval was obtained from the La Trobe University Human Ethics Committee (FHEC12/092). All procedures followed were in accordance with the ethical standards of the responsible committee in human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent and approval was obtained from the respondents and participating organization for being included in the study'.

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