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Knee Osteoarthritis and Its Related Issues: Patients' Perspective

(Osteoarthritis Sendi Lutut dan Isu yang Berkaitan: Perspektif Pesakit)

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ABSTRACT

Knee osteoarthritis (OA) is a common chronic joint disease that results in pain and disability in many people. Cultural practice may influence patients' views about their condition, its related issues and management. The aim of our study was to explore the perspective about knee OA and its related issues among Malaysian patients with knee OA. Twelve patients diagnosed with knee OA (8 females and 4 males) attending physiotherapy sessions at a University Hospital, mean age (SD): 67.1(9.4) years and median visual analog scale score of 5/10 participated in this qualitative study. One to one in-depth interviews were conducted, audio recorded and later transcribed verbatim. Three main themes were identified from the transcribed data; knee pain and its' related issues (reason and aggravating factors of knee pain, coping strategies), impact of knee pain (impact on daily activities and emotions) and physiotherapy management (effects and expectations of physiotherapy, compliance and adherence towards home exercises). Most participants expressed that their knee pain was aggravated by certain movements that had an effect on their daily activities namely squatting. The findings also suggested that physiotherapy management was perceived as secondary prevention rather than a cure. Findings from this study provides information about the perceptions and related issues of patients with knee OA. This information may help health professionals in tailoring patient-centered care and provide better management.

Keywords: Knee osteoarthritis; perspective; daily activities; physiotherapy

ABSTRAK

Osteoarthritis (OA) sendi lutut adalah penyakit sendi kronik yang kerap menjadi punca kesakitan dan kurangupaya di kalangan ramai orang. Amalan budaya boleh mempengaruhi pandangan pesakit tentang keadaan mereka, isu-isu yang berkaitan dan pengurusan. Tujuan kajian ini adalah untuk meneroka perspektif tentang OA sendi lutut dan isu-isu berkaitan di kalangan pesakit OA sendi lutut di Malaysia. Dua belas orang dewasa dengan diagnosis OA sendi lutut (8 perempuan dan 4 orang lelaki) yang menghadiri sesi fisioterapi di Hospital Universiti, purata usia (SD): 67.1 (9.4) tahun dan skor median skala analog visual 5/10 telah menyertai kajian kualitatif ini. Temubual mendalam telah dijalankan secara individu, audio direkodkan dan kemudian diterjemahkan verbatim. Tiga tema utama telah dikenalpasti dari data transkripsi; kesakitan lutut dan masalah yang berkaitan dengannya (sebab dan faktor-faktor yang menyebabkan sakit lutut, strategi mengatasi), impak sakit lutut (kesan terhadap aktiviti harian dan emosi) dan pengurusan fisioterapi (kesan dan jangkaan fisioterapi, pematuhan terhadap latihan senaman di rumah). Kebanyakan peserta menyatakan bahawa kesakitan lutut mereka telah diperburuk oleh pergerakan tertentu yang mempunyai kesan ke atas aktiviti harian mereka iaitu mencangkung. Penemuan ini juga mencadangkan bahawa pengurusan fisioterapi lebih dianggap sebagai memberi kesan pencegahan sekunder berbanding mengubati. Penemuan dari kajian ini memberikan maklumat tentang persepsi dan isu berkaitan pesakit yang mengalami OA sendi lutut. Penemuan ini boleh membantu ahli profesional kesihatan dalam menyesuaikan penjagaan yang berpusatkan pesakit dan memberikan pengurusan yang lebih baik.

Kata kunci: Osteoarthritis sendi lutut; perspektif; aktiviti harian; fisioterapi

INTRODUCTION

Osteoarthritis (OA) is a common chronic illness (Power et al. 2008). Knee joint is one of the most frequently affected joint due to its weight-bearing function. OA is incurable (Fransen et al. 2015) and accompanied by chronic pain (Hunter et al. 2014). About 251 million people suffer from knee OA worldwide (Cross et al. 2014). Hip and knee OA ranked the 11th highest in terms of Years Lived with Disability and 38th highest in terms of Disability Adjusted Life Years (Cross et al. 2014). The Malaysian Community Orientated Program for Control of Rheumatic Diseases showed that 64.8% of adults experienced knee pain and OA was the most recurring diagnosed condition (Veerapen et al. 2017).

Knee OA leads to individual (physical and psychological) and socioeconomic burden. Individual burden includes suffering from chronic pain, limitations in daily activities, participation restriction and poor quality of life (Hunter et al. 2014; Wilkie et al. 2007). Both inflammatory and mechanical knee pain due to OA are known to interfere with daily physical function and

social activity (Carmona et al. 2017; Mackay et al. 2014; Alkan et al. 2014). Severity of pain can range from barely perceivable to immobilizing (Heidari 2011) which further contributes to fatigue, poor mood and reduced quality of sleep (Hawker 2009). Poor quality of physical health was the predominant highlighted problem among people with knee OA in a local cross-sectional study (Zakaria et al. 2009).

Physiotherapy is shown to be beneficial in terms of reducing knee pain, improving physical function and decreasing disability in people with knee OA (Fransen et al. 2015; Hinman et al. 2007; Jamtvedt et al. 2008; Bosomworth 2009). However, there is limited information regarding views about pain, quality of life and physiotherapy in people with knee OA, more so among Malaysian multi-ethnic society. Cultural differences and practices can influence perceptions of patients. The aim of our study was to explore perspectives of patients with knee OA mainly about pain experiences, its impact, effects of physiotherapy and their personal expectations.

METHODOLOGY

PARTICIPANTS

A qualitative study using in-depth interviews was conducted to explore the perspective regarding knee OA and its related issues. Participants with knee OA were recruited using purposive sampling from the Physiotherapy Department of Hospital Canselor Tuanku Muhriz (HCTM). This study was approved by the Research and Ethics Committee of Universiti Kebangsaan Malaysia (UKM PPI/111/8/JEP-2017-021). The inclusion criteria includes clinically diagnosed with knee OA by an orthopaedic specialist and presented with knee pain score > 20 mm on a 100 mm visual analogue scale (VAS). Those who had inflammatory arthritis (such as rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis and systemic lupus erythematosus), chronic physical health conditions (such as stroke that affect their mobility), cognitive deterioration or severe mental diseases were excluded.

INTERVIEWS

Participants were provided with an information sheet and signed a consent form before the interview. Demographic data was obtained from each participant. One-to-one in-depth interviews were conducted in Malay, English or Chinese language with a structured interview script by the same interviewer, assisted by a trained research assistant. Structured interview with guided questions adapted from a few previous studies covered about the participant's experience, pain, feeling, treatment, self-management, impact on daily life, fears and coping strategies having knee OA.

DATA ANALYSIS

All the interviews were audio-taped and then transcribed verbatim. Transcribed data was checked with the participants by phone or email for validity and analyzed using thematic analysis method. Two researchers (Singh DKA and Chua WQ) independently reviewed the data *repeatedly until* complete *familiarization* was gained to identify and code distinct themes. The results were compared and discussed between the researchers for consensus. Statistical Package for the Social Sciences (SPSS) software version 20.0 was used to summarize the descriptive characteristics of the participants.

RESULTS

Participants demographic characteristic are as shown in Table 1. Twelve participants; 8 (67%) females and 4 (33%) males aged between 53 to 85 years [mean (SD) = 67.1 (9.4) years] participated in this study. Median visual analogue scale (VAS) scores for these participants was 5/10 [mean (SD) = 4.7 (1.7)].

Three main themes were identified from the transcribed data; knee pain and its' related issues, the impact of knee pain and physiotherapy management. Examples from participants' statements were taken to create subcategories.

THEME 1: KNEE PAIN AND ITS' RELATED ISSUES

UNDERSTANDING ABOUT CAUSE OF THE PAIN

Majority of the participants believed that the cause of their knee pain was due to aging and wear and tear of the knee joint.

> I only know that it is a wear and tear of the ligament and the fluid is reducing is it, so the friction there, that's what causing me the pain. (P1)

> Doctor says because of aging, the fluid becomes lesser the reason of having pain. (P2)

Some participants felt that their knee pain was triggered by overloading their knees when they were younger.

> Maybe I did too much work and play games when I was young. For example, I liked to play badminton when I was young, maybe that is the reason. (P11)

AGGRAVATING FACTORS

Participants mentioned that their knee pain appeared when executing specific movements and when performing certain postures. Most of the participants described that squatting, prolonged sitting, standing, ascending and descending stairs increased discomfort and pain at their knee.

When you sit down, when you stand up, you get the pain. Start to feel the pain when walking and standing for too long. (P4)

When I squat, it is very painful. (P7)

Now if I walk in my own garden for half an hour, I can felt my leg is fatigue during walking and knee started to pain. (P12)

COPING STRATEGIES

Majority of the participants mentioned about their strategies to relief and cope with their knee pain. Most common coping strategy used was short period of rest.

I always rest, when the pain disappear, only I stand up again and move. (P3)

Walking too long, I have to rest. I have to get up and stand a while before I can walk. (P7)

Participants also reported coping strategies such as massage using creams/ointments, medication and posture/movement modification.

I buy cream. Apply cream to relieve the pain. (P11)

Sometimes I will apply ointment and sometimes I will massage it. (P12)

I take the pain killer when the pain is very bad. (P10)

I mean uh if I have to sit or squat then I will try to find a low chair (P8)

When I want to do something that will cause the pain, then I just don't do it. Like I'm praying on a chair. (P11)

THEME 2: IMPACT OF KNEE PAIN

IMPACT ON DAILY ACTIVITIES

Participants indicated that knee pain affected their movement and activities. Getting up from sitting, squatting, carrying or lifting, prolonged walking, ascending and descending stairs were the common movements reported to be difficult by the participants.

I need to find something to hold when I want to get up. (P3)

I had difficulty climbing up the stairs and I can't lift any heavy things because the pain is worse. So end up not able being to do much. (P7)

You know make movement difficult, a lot of things I like to do I can't do. I can't squat is a big problem isn't it. I can't do my gardening. And I don't like to sit down. So I find life is very limiting for me (P7)

I even cannot standing up and walk to get a cup of water to drink. Every morning I need my children to hold me to walk to living room after getting up from bed. After that I just sit on the chair and my children will serve me the breakfast. I just cannot stand up. (P12)

Some participants expressed that they had to limit their participation in physical and leisure activities.

I can't walk about so much. So no gallivanting all over the place. (P7)

I used to do a lot of gardening. Carry these pots here and there, and then carry laundry basket. I don't do that anymore. (P7)

Previously I will follow my children if they asked me to go shopping mall but now I don't want to go anymore. (P12)

Furthermore, some participants felt that their movements were slower because of their knee pain.

It was like when you want to walk, but your leg cannot step forward. Cannot step forward. I only can step half step compare to before.I just know when I walk, it became slower. (P2)

I'm still doing some housework, I help my children like carry clothes, but slowly. (P3)

Several participants modified their position when doing certain activities. For example, participants who were Muslims performed their whole prayers in only sitting position rather than sitting on the floor.

It is difficult to kneel when praying, therefore I pray in sitting. And I cannot stand for too long. I take bath in sitting. (P3)

Carry on doing if I need to trim the trees, I will bring the chair to sit down and trim. I always get something to sit. I won't stand. (P4)

IMPACT ON EMOTIONS

Mostly, participants accepted their condition as an aging process with some initial negative feelings.

I accepted it right from the beginning. I don't want to feel sorry for myself. I said ok so I must do something to delay the next stage. (P4)

Initially I worried if I couldn't walk and I was getting angry easily because I cannot do house chores. Now my knee pain has improved and I already accept my condition after self-adjustment. Previously I couldn't accept this but now when I saw many people condition even worse than me, especially who aged around 60 years old. I still enjoy my life. (P12)

However, some participants had apprehension about their dependency. The main concern was unable to remain mobile and resulting in caregiver burden; fear and uncertainty of the outcomes of knee pain.

I worried and I don't want to burden my children as they need to work, send their kids to school. That's why I hope can be recovered and don't want to burden them. (P3)

> Worry that I really can't walk and on the wheelchair that's my fear. That will limit your movement. It makes movement a bit uh difficult. (P6)

> Fear on suddenly the legs are bent. I don't wish to become like that. Make walking become more inconvenient. (P10)

Only two participants denied having worries about their knee pain.

> I'm not afraid on anything. This type of fear is no use. Just do anything you want to do. No fear. Sure do not have. But is for me la, this is my character. (P2)

> No fears. Nothing to worry. (P5)

THEME 3: PHYSIOTHERAPY MANAGEMENT

EFFECTS OF PHYSIOTHERAPY

Most participants expressed that physiotherapy management assisted in improving physical performance mainly balance, strength, reducing pain and decreasing fear avoidance activities.

> Have little improvement. I feel better when walking. More stable. Not fast, but more stable when walking. (P2)

> When I walk, I can feel that my steps are firmer, not like last time maybe walk ah fear of falling down. I climb up the stairs slowly, no pain. I can walk without any pain. A bit longer also is ok. (P7)

> After the physiotherapy, I become more confident to walk on uneven surface compared to previously in which I felt my knee become misaligned and almost fell down when I stepped on the uneven surface. (P12)

On the other hand, some participants stated that physiotherapy was ineffective in decreasing knee pain, but they believed physiotherapy could delay worsening of the condition.

> You know like more frequent, more often. But the pain, the degree of pain is about the same. (P4)

> Physiotherapy is useful. Not reducing the pain, but the pain doesn't get worse. (P11)

Many participants believed that there was no cure for knee OA. However, they expressed hope for the maintenance of their current physical ability and pain reduction with physiotherapy management.

> It can only go worse, it can't get any better. Only we can maintain. That's why now I'm trying to maintain. I will never get better and neither will I recover but I can maintain. (P7)

> Don't think it can be recovered, just can maintain and don't increase the pain. Hopefully can reduce the pain but if recover, I don't think so. (P11)

EXPECTATIONS FROM PHYSIOTHERAPY

Participants' expectations from physiotherapy sessions included education on exercises, the Do's and Don'ts and self-management.

> You must get the proper people to guide you. (P7)

> Like we want to stand up, we need to do like, this, this otherwise we cannot stand up. Learn the technique how to cope with our problems. (P11)

> If I didn't receive physiotherapy, I didn't seek medical advice at hospital, I will have no idea how to manage my knee pain. (P12)

Participants were also positive about improving or delaying worsening of their knee pain through physiotherapy.

> I hope can be getting better la. Everyone hope can be getting better through exercises. (P2)

> I just want to delay the next stage. (P4)

> I hope it will help me maintain. (P8)

COMPLIANCE AND ADHERENCE TOWARDS HOME EXERCISES

Majority of the participants believed that doing home exercises was important to help them to improve or maintain their condition. Therefore, they complied and adhered to the home exercise program provided.

> I will do exercises at home until it is not so pain. Continue exercise. Exercise is the only way. (P2)

> Recover 100% of course no, but getting better I think yes if I continue every day. The day exercise not only here but at home also. I have to continue doing. (P5)

> I buy an exercise bike at home, at least I make sure I cycle. I cycle about 10-20 minutes. (P8)

However, 2 out of 12 participants informed that they were non-compliant to home exercises due to laziness and not having some of the equipments used while performing therapy.

> Only that I'm lazy in exercise. (P6)

> But at home we don't have that kind of belt that they gave us to pull. (P10)

DISCUSSION

In this qualitative study involving 12 Malaysian patients with clinical diagnosis of knee OA, we aimed to seek their perspectives regarding knee OA. Three main themes were identified based on content analysis; knee pain and its' related issues, the impact of knee pain and physiotherapy management.

TABLE 1. Characteristics of participants (n = 12)

ID	Sex	Race	Age (Years)	BMI (kg/m2)	Side of OA	Symptoms (Months)	VAS (Movement)	Type of pain	Walking aid (Yes/No)
P1	Female	Indian	64	23.2	Left	36	3	Pricking pain	No
P2	Male	Chinese	85	28	Bilateral	12	4	Pulling pain	No
P3	Female	Malay	69	32.9	Right	12	6	Unable to describe	Yes
P4	Female	Chinese	76	20.7	Bilateral	120	4	Unable to describe	No
P5	Female	Chinese	53	18.1	Left	156	5	Dull ache	No
P6	Female	Malay	58	26.3	Bilateral	216	5	Unable to describe	No
P7	Female	Chinese	69	19.8	Left	5	7	Unable to describe	No
P8	Female	Chinese	57	29.4	Bilateral	36	8	Throbbing pain	No
P9	Male	Malay	68	28	Left	6	5	Unable to describe	Yes
P10	Male	Chinese	65	34.7	Left	5	5	Pulling pain	No
P11	Male	Malay	79	33.7	Bilateral	36	3	Unable to describe	Yes
P12	Female	Chinese	62	25.1	Right	36	2	Unable to describe	No

Participants in our study had developed various coping strategies to reduce their knee pain. The strategies used were diverse and had positive effects based on participants' responses. Among the most common strategy used was a short period of rest, massage using cream and ointment, pain relief medication and posture modification. Massage was common as one of their coping strategies. This strategy is commonly used in Asian culture and has been reported previously (Chan et al. 2011). In contrast, pain relief strategy reported among westerners consisted of distractions or social support to reduce psychological distress, taking analgesics or exercising to delay worsening of the condition and reducing pain (Carmona et al. 2017). The coping method used by our study participants can be considered as a passive approach compared to active ones in western countries.

Similar to other overseas studies (Chan et al. 2011; Mackay et al. 2014), most participants in our study expressed that knee pain interfered with their activities of daily living. Squatting, getting up from sitting, ascending and descending stairs were the common movements reported to be difficult by the participants. Interestingly, squatting was the main restricted activity reported in our study. Squatting is a common position taken in Asian culture, namely when performing prayers and in activities of daily living such as washing and scrubbing the floor. Biomechanically, squatting is a full weight position that loads the knee and excessive loading in this position may contribute and worsen OA. Increased biomechanical forces are often the cause of knee OA progression (Englund 2010). A relationship between work-related knee bending exposure and knee OA has been reported (Hasan et al. 2010). Moreover, squatting and kneeling are considered as the main primary risk factors correlated with knee disorders (Heidari 2011).

Other than daily activities, many participants reported that knee pain affected their emotions. Apprehension about being dependent was noted and this could have resulted in fear, worry, and other negative feelings. Only 2 out of the 12 participants reported that knee pain did not affect their emotions. These findings are supported by previous studies in which adults with knee OA usually experience stress, stirred from the unpredictability of symptoms and ineffectiveness of treatment (Carmona et al. 2017; Chan et al. 2011; Mackay et al. 2014). Psychological co-morbidities such as anxiety and depression are highly common among patients with OA and are associated with higher pain and physical limitations (Sharma et al. 2016).

Generally, most participants believed that there was no cure for knee OA, and they expected to control their symptoms and prevent further deterioration with physiotherapy. Improved physiological functions such as improved quadriceps strength, walking speed and reduced pain have been documented with physiotherapy in people with knee OA (Fransen et al. 2015; Hinman et al. 2007; Jamtvedt et al. 2008; Page et al. 2011). Some participants in our study reported that physiotherapy was ineffective in decreasing knee pain, but they believed physiotherapy could help them in maintaining their condition and preventing further deterioration. Improvements in physiological function shown quantitatively could be perceived otherwise by individuals. Similar results were shown in a previous study in regard to physiotherapy (Chan et al. 2011).

Adherence towards exercise among people with knee OA are influenced by individual attributes, personal experience as well as social and physical environment, and these may either be facilitators or barriers to exercise (Petursdottir et al. 2010). In our present study, most participants reported that they complied and adhered towards exercises. Adherence to exercise among participants in our study may be explained by the believe that exercises and physiotherapy assisted in improving symptoms and preventing worsening. However, 2 out of 12 participants reported non-adherence to home exercises due to laziness and lack of equipments.

Home exercise program have been shown to increase functional level, decreases pain severity and improve quality of life (Yilmaz et al. 2013). In addition, improving adherence to exercise maximizes outcomes in the longer-term (Page et al. 2011). Therefore, physiotherapist following-up patients with knee OA should take home exercise programs into consideration and address non-compliance in order to increase intervention efficacy. Physiotherapists also can add more coping strategies such as activity modification, a short period of rest between activities and self-management of knee pain using strategies that works best for individuals.

Among the strengths of this qualitative study was that it added to the current knowledge and provided in-depth perspectives of Malaysians patients with knee OA. The findings from our study should not be generalized as it was confined to only one setting. Future studies should include a larger sample size from more settings.

CONCLUSION

Participants in our study believed that the cause of their knee pain was due to aging and degenerative changes of the knee joint. Majority of the participants described squatting, kneeling and stair climbing as factors that aggravated pain. Common coping strategies were short period of rest and massage using ointments to relieve knee pain. Participants reported that knee pain had a substantial impact on their lives in terms of daily activities and emotions. Physiotherapy management was perceived as maintenance for knee OA rather than a cure. In conclusion, our study results provide perceptions of people with knee OA that can assist health professionals in tailoring client-centered and effective management with consideration of other models such as biopsychosocial models.

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