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Approaches to osteoarthritis - A qualitative study among patients in a rural setting in Central Western India

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ABSTRACT

Background: Osteoarthritis (OA) represents a major cause of disability in India. For implementation of best practice management, it is important to consider the views of people in India since they might deviate from those expressed in previous studies by people with OA in the Western world.

Objective: The purpose of this study was to explore and describe approaches toward OA and its management among patients in a rural setting in Central Western India.

Design and Method: Conventional content analysis was used to analyze semi-structured interviews with 24 patients diagnosed with OA from the target area of Pravara University Hospital and ten adjacent primary health care centers in Maharashtra, India.

Results: Four categories; lack of power, active ambivalence, taking control and a constant struggle were identified as patients' approaches to OA. The categories were further elaborated on in seven subcategories.

Conclusion: Daily challenges and efforts, of which some may be unique to patients in a rural setting in India, underlie passive and active approaches to OA and its management. Understanding these may enhance Indian physiotherapists' implementation of evidence-based self-management programs adapted to Indian conditions and reduce the distress of their patients.

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Experiences; interviews; management; perceptions; qualitative research



Introduction

India is one of the world's largest countries with a population of over 1.3 billion with 66% living in rural areas (World Bank, 2018). With an increasing life expectancy, approaching 70 years, diseases such as osteoarthritis (OA) have become more prevalent. Studies on the prevalence of OA in India present conflicting results due to differences in inclusion criteria and survey methods. The prevalence of knee OA based on clinical criteria has been estimated to be 4.4% and 3.4% in rural and urban India, respectively, when adjusted for demographic differences (Haq and Davatchi, 2011). Higher prevalence figures of 28.7% and 29.7% have been reported in other Indian studies (Das, Routray, and Panigrahi, 2018; Pal et al., 2016). Older age, obesity, and genetic factors increase the risk of OA (Vina and Kwoh, 2018), as do occupational activities with repetitive work or joint overload, such as squatting, kneeling, and cross-legged sitting that are common in India (Felson et al., 2000; Sandmark, Hogstedt, and Vingard, 2000). OA can affect both physical and mental health, sleep, work and social participation

as well as quality of life (Hunter, Schofield, and Callander, 2014). The risk of developing other co-morbidities, such as cardiovascular disease and diabetes is also increased (Nuesch et al., 2011).

There is no cure for OA, but several treatment strategies have been developed to relieve symptoms and support disease management. Medication, commonly non-steroidal anti-inflammatory drugs (NSAID), and surgical intervention are options commonly offered to patients with OA. However, clinical recommendations for best-practice management of OA focus on patient education and lifestyle modifications (e.g. exercise and weight loss) (Hochberg et al., 2012; Nelson et al., 2014; Zhang et al., 2008). Lack of facilities, low income, and low health literacy in rural communities in India (Singh and Badaya, 2014) might differ from the conditions in urban communities in India and internationally, thus hampering implementation of such recommendations (Dutta and Lahiri, 2015).

For successful implementation of best practice management of OA, it is important to consider the

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views held by people with OA. A large body of knowledge, based on studies with a qualitative design, has explored such views. Two systematic reviews using meta-ethnography summarize the factors affecting the experiences of living with OA (Smith et al., 2014a) and the perceptions on conservative management strategies (Smith et al., 2014b). However, the above-cited studies were mainly carried out in North America, Western Europe, and Australia. To the best of our knowledge, no studies with a qualitative design and exploring the perspectives of people with OA in India exist. The aim of the present study was thus to explore and describe approaches toward OA and its management among patients in a rural setting in Central Western India.

Methods

Design

A descriptive design with a qualitative, inductive approach was applied, and conventional content analysis was used to systematically describe the phenomenon (Elo et al., 2014).

Participants

A strategic maximum variation sampling method was used in order to include participants with a variation in demographic and background characteristics. Twenty-four participants were recruited from the target area of Pravara University Hospital and 10 adjacent primary health care centers in Maharashtra, India (Table 1). They were mainly patients at the physiotherapy department, commonly occupied in farming and related industry (e.g. sugar production) but also staff from the

university and the hospital. The majority in this setting live with joint families, including several generations. Adults with hip or knee pain and no recent trauma were eligible for inclusion in the study. Exclusion criteria were chronic widespread pain and other diseases such as inflammatory joint disease or cancer. Ethical approval was received from the Institutional Ethical Clearance Committee for Undergraduate and Postgraduate Research at Dr. APJ Abdul Kalam College of Physiotherapy.

Recruitment

Two of the authors (GJ and SK) recruited English-speaking participants among staff at the university hospital and participants speaking only Marathi from among patients at the physiotherapy department. Potential participants were informed orally and/or in writing about the study. Those interested in participating underwent a structured clinical examination by a physiotherapist (GJ), following American College of Rheumatology clinical practice guidelines for OA (Altman et al., 1991), to confirm their OA diagnosis. Written informed consent was obtained from those finally included in the study.

Data collection

Demographic data were collected using a questionnaire specifically developed for the study. Semi-structured interviews were conducted from November 2017 to February 2018 using an interview guide consisting of main areas of inquiry (Table 2). The interview guide was developed by two of the authors (CHO, ES) in collaboration with the two authors performing the interviews (KK, GJ). Open-ended questions with follow-up questions were used to facilitate elaboration and to get more details. Questions varied slightly between participants because they were adjusted to individual responses during the interview. The interviews were performed by two of the authors; one (KK) being a Swedish physiotherapy researcher experienced in qualitative methods and familiar with the Indian context, and the other (GJ) being an Indian master student in physiotherapy familiar with both English and Marathi and with clinical experience managing patients with OA. KK trained the interviewer GJ in interview technique before starting the data collection. The first two interviews were then performed by KK in English with GJ as a present observer. The next six interviews were carried out by GJ in Marathi in the presence of KK, who was unfamiliar with

Table 1. Characteristics of the participants (n = 24).

Pravara University Hospital/Primary Health Care Centers , n (%)	13 (54)/11 (46)
Gender , male/female, n (%)	9 (37.5)/15 (62.5)
Age , years, median (min-max range)	65 (49–85)
Language , English/Marathi, n (%)	2 (8)/22 (92)
Disease duration , years, median (min-max range)	3 (0–25)
Body Mass Index , n (%)	
Underweight [<18.5]	1 (4)
Normal weight [18.5–24.9]	17 (71)
Overweight [25–29.9]	6 (25)
Obesity [≥ 30]	0 (0)
Marital status , single/married, n (%)	3(12.5)/21 (87.5)
Children at home , ≤ 5 / >5 , n (%)	13 (54)/11 (46)
Work status , part time/full time/not employed, n (%)	9 (37.5)/12 (50)/3 (12.5)
Education , university/high school/public school, n (%)	6 (25)/6 (25)/12 (50)
Activity limitation , VAS [0–10, none – complete], median (min-max range)	5.5 (1.6–8.9)
Perceived pain , VAS [0–10, none – worst imaginable], median (min-max range)	5.9 (3.2–8.5)

Table 2. Interview guide.

Opening question:
 “Tell me a little about your disease. How would you describe the impact of your present disease/symptoms a typical normal day at home, at work or another place”

Questions:
 Can you tell me how you understand osteoarthritis (OA) – what is it?
 Describe a situation or event that has had a significant impact on your life with OA.
 Tell me something positive you have experienced with your symptoms/disease.
 What about negative experiences with your symptoms/disease?
 How do you typically handle symptoms from your OA?
 Is there anything that makes your life with OA satisfying?
 What could be done to make your life with OA more satisfying?
 Describe a dialog or communication you have had about your symptoms/disease that has made an impact on you – either positive or negative.
 What advice about managing OA would you give to someone else – using your knowledge and experiences?
 What would your ideal life with OA look like, if you could make a wish?
 Tell me about your expectations for the future.
 Is there anything else you would like to add?

Marathi. Oral summaries of these interviews were given by GJ to KK at the end of each interview in order to increase trustworthiness. The remaining 16 interviews were performed in Marathi by GJ alone. Interviews were performed in secluded rooms at the outpatient physiotherapy clinic, lasted 9 to 27 minutes, and were audio-recorded, transcribed verbatim, and translated into English from Marathi by GJ. Transcripts were later checked and corrected by GJ under the supervision of two of the authors (ES and CHO) who were experienced in qualitative research methodology.

Data analysis

Inductive qualitative content analysis inspired by Graneheim and Lundman (2004) as well as Elo and Kyngäs (2008) was used to analyze the interviews (Tables 3 and Tables 4). One of the authors (GJ) performed the primary analysis, which was refined and finalized in collaboration with ES, an experienced physiotherapist within rheumatology, behavioral medicine,

Table 3. Description of the data analysis.

Familiarization	To become familiar with and get an overview of the material, all of the transcribed interviews were read carefully by one of the authors (GJ).
Open coding and meaning units	Open coding was performed by writing manually notes and headings in the margins describing approaches to OA. Parts of the text (meaning units) containing elements related to the code through their content and/or context were then identified. The material was read through several times while open coding, and meaning units were identified to cover all aspects of the phenomenon. Open coding was performed iteratively for all interviews by one of the authors (GJ). To ensure coding consistency another author (ES) independently coded five of the interviews. The emerging codes and meaning units were discussed until agreement was reached between the researchers (GJ, ES).
Grouping codes	The codes were then moved/collected from the margins onto a manually created mind map structure. Codes representing similar meanings of approaches to OA were grouped together.
Creating categories and subcategories	The various codes were compared regarding differences and similarities. Codes with related meanings were manually grouped together in categories.
Refining and labeling	To increase trustworthiness, two of the authors (GJ, ES) repeatedly discussed and compared the emerging categories and subcategories with the content of the original interviews several times until negotiated consensus was reached. Discussions with the author used as the peer expert (CHO) were held continuously. The categories and subcategories were labeled by GJ and ES.
Quotes	Quotes from the interviews were chosen and are provided for illustration and trustworthiness.

and physical activity and with expertise in qualitative research approaches. CHO, an experienced physiotherapist and researcher within rheumatology, behavioral medicine, and physical activity and with expertise in both qualitative and quantitative research approaches peer-reviewed the analysis.

Table 4. Examples of meaning units and codes underlying subcategories and categories.

Meaning unit	Code	Subcategory	Category
I feel very frustrated due to the knee pain. Unable to travel and, I can't attend social activities.	Frustration and social loneliness	Negative psychosocial impact	Lack of power
I took hot water heating but it increased my pain. And as you advised – cold pack, but in the winter cold pack can aggravate my pain. So what to do? <i>ambivalence</i>	Failing treatments	Doubts on treatments	Active
I stopped myself in work as pain started, took a break and started again after getting some relief.	Ergonomics	Finding new solutions	Taking control
I ignore it. If I focus on pain the work cannot be completed. Since I am a farmer, it is compulsory for me to do farm work.	Ignorance	Work life and poverty	A constant struggle

Findings

Four categories: 1) lack of power; 2) active ambivalence; 3) taking control; and 4) a constant struggle were identified as patients' approaches to OA in a rural setting in Central Western India (Figure 1). The categories were further illuminated through seven subcategories.

Lack of power

A passive and afflicted approach toward the disease and its management was expressed in the attribution of the causes of the disease to external events and by simply observing symptoms. Also, letting surrounding situations and one's internal psychological state limit one's ability to influence the disease was described.

Victim to fate

OA was explained as a disease affecting both females and males at any age, but also as a disease starting at the time of menopause in women or as a consequence of gaining weight. A history of trauma was another explanation, accompanied by thoughts that this was the foremost reason of OA. Beliefs that OA could be transmitted genetically from one generation to the next were expressed, as well as joint space narrowing being present in OA. Negative thoughts about the winter season were expressed as beliefs about joints and muscles getting stiffer during this time period, or that pain could be aggravated by exposure to cold. Aging was another explanation of OA pain. An overall opinion

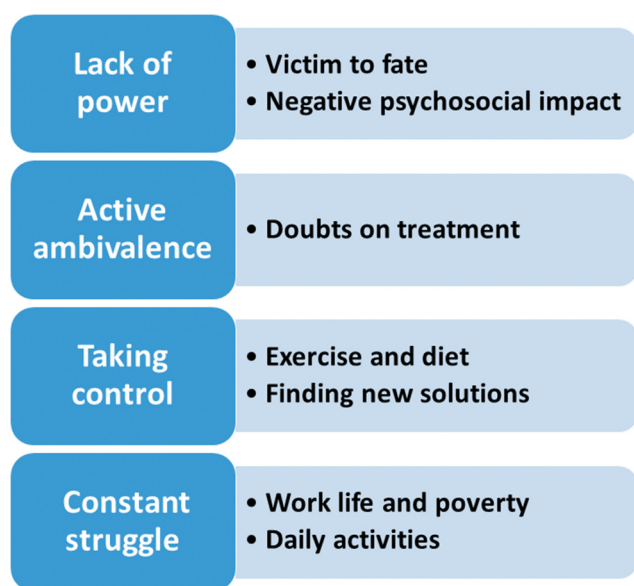


Figure 1. Approaches to osteoarthritis among patients in a rural setting in central western India.

was expressed that rural people lack basic knowledge about self-care and therefore ignore minor health issues. This ignorance of different symptoms in daily life could lead to further complications as well as increased suffering and discomfort. Seeking health care was not considered as an option until the problems became too severe.

“My grandmother had the same problem. Also, problems increase with age and starts there.” (Female, 50 years)

“OA can occur in anyone no matter if they are male or female or any particular age.” (Female, 76 years)

“I have more pain in winter season.” (Female, 49 years)

“In the village, all people are under continuous strain and they are illiterate, they don't even know the most basic things about care.” (Female, 49 years)

“I didn't think much of it previously when I had less pain, but now it is severe, so I had an x-ray taken six months ago.” (Female, 64 years)

Negative psychosocial impact

Living with OA for a long period of time and the inability to cope well with the disease hampered both work and social life, which could lead to feelings of dissatisfaction. Unhappiness at older age and decreasing joy in life can also contribute to dissatisfaction with the overall life situation. A longing for affinity with other people who understand what it means to live with OA was expressed. A belief that no cure exists for the damage in the knees resulted in feelings of cluelessness regarding the management of the disease. Staying alone at home for the whole day, while other family members went to their respective workplaces, could lead to feelings of loneliness. The problems with traveling and socializing created feelings of emptiness and the inability to share feelings with other people. The need for recognition and sympathy for the pain from others was expressed, and the lack of such sympathy was seen as a cause of depression.

“I felt so disagreeable sometimes; I was getting irritated and sometimes I took all my frustration out on the students of my school.” (Female, 64 years)

“Only OA people can understand the situation of OA people better.” (Male, 56 years)

“Due to the pain I got frustrated and gave up hope. Like there is nothing that can be cured with me.” (Female, 55 years)

“My family is cooperative, but still, they all are busy in their work whole day, so it is somewhat difficult for me to manage.” (Female, 60 years)

“I am alone, and no one even asked me yet about my pain. So, I know that I have to stand up for myself.” (Female, 66 years)

Active ambivalence

An active but hesitant approach toward the disease and its management was expressed as attempts to take action by use of medication or physical modalities.

Doubts on treatment

Medication was reported to result in temporary pain reduction. However, it was doubted that more medication would cure the disease or relieve the pain. Furthermore, it was described that medication resulted in weakness of the body. Ayurvedic treatment was also used for knee pain, and regular intake of calcium was perceived as important. In order to support the knees, bandages and limb elevation were used during sleep. The use of hot packs was mentioned as useful for all types of joint and muscle pain, but sometimes this increased knee pain and swelling. Doubts about cold packs being effective during the winter season were expressed, while pain relief and reduced swelling of joints after cold pack application was also expressed.

“My pain was relieved temporarily with medicines, but I want permanent relief for my pain.” (Female, 50 years)

“You are advised for cold packs, but in winter cold pack can aggravates my pain.” (Female, 67 years)

“I used hot water heating, but the pain increased.” (Female, 60 years)

“I took too much medication, which led to more weakness in my bones.” (Female, 67 years)

“Ayurveda is the best treatment in our town.” (Female, 60 years)

“My muscles get so stiff and sore, but after a hot water bath I feel better.” (Male, 65 years)

Taking control

An active and purposeful approach toward the disease and its management was expressed as a deliberate decision on whether to engage in healthy lifestyle behaviors.

Exercise and diet

There was a belief that performing exercise and keeping informed about weight reduction in young age could be helpful in delaying the onset of OA. Another driving force for exercising was to cope with the pain. Exercise was also used when other treatment options

could not be afforded. However, for some individuals walking or performing basic movements were rather unfamiliar strategies for managing OA, while for others such activities increased the ability to move after knee locking following prolonged time in the same position. A belief that exercise might aggravate pain was present, and assumptions that intense exercises would be harmful for the elderly were expressed. The reasons for not performing exercise were that pain relief was obtained by other management strategies, lack of time, laziness, and ambivalence to exercise. However, for some individuals', physiotherapy exercises resulted in pain relief and inspired them to continue with general physical activity. Group exercises were seldom performed but were expressed as something positive and inspiring that could perhaps increase social activity. Awareness about healthy eating and drinking, avoidance of sweets and fatty foods, and drinking coconut oil were also present.

“I wish to go to 10 years back and reduce my weight so that this could reduce my knee and back pain.” (Female, 55 years)

“When I have pain, I will do exercises but when pain decreases, then I do not need to.” (Female 66 years)

“I can't do exercise because I am unable to.” (Female, 67 years)

“I got depressed in the initial phase, but after some days I started exercising regularly. The pain was severe for the last 8 months, but now it is better with exercise.” (Male, 63 years)

“Maybe the doctor said that exercise reduces pain, but I think pain increases because patients have to take a rest when they have pain, and if you do exercise it can aggravate the pain.” (Female, 67 years)

Finding new solutions

Taking small breaks during work as well as working at a slower pace to prevent increased symptoms was thought to be helpful. Further, awareness about the negative impact of sitting and standing for prolonged periods of time was present. Using slippers in daily life as well as avoiding cross-legged sitting were used as ergonomic self-management. Pain and locking in the knees were present when getting up from Indian-style toilets or after a long time of squatting. Western toilets could be one solution. Receiving support from the family, tuning to music, and avoiding exertion could improve the possibilities for a happy life. Seeking support and strength from God to cope with symptoms and problems was thought of as valuable. The need for regular health checkups was also expressed.

“I do some work for 10–15 min. After that I stop and sit down or walk for 15–20 minutes.” (Male, 80 years)

“I have difficulty lifting loads in the farm and difficulty squatting while doing cutting work in the farm. I sit for some time in a chair and in long sitting since continuous work for a long time in one position results in pain.” (Female 60 years)

“I stopped walking, squatting, and cleaning and reduced my workload and take better care of myself.” (Female, 69 years)

“I think that when we have pain, we should not need to take a rest completely. We have to do a little movement and little work. So that it reduces pain.” (Female, 67 years)

“I am listening to music to distract myself from the pain.” (Female, 66 years)

A constant struggle

An active but demanding approach toward the disease and its management was expressed as a battle with important and compulsory aspects of life.

Work life and poverty

Ignoring pain to fulfill daily work needs was expressed as a strategy. Continued work on the farm despite a lot of symptoms was therefore highlighted, and the heavy workload was also blamed as the cause of OA. In addition, working with poor posture or in a wet area were suggested as other causes for OA. Lack of knowledge on ergonomics was a reason for different symptoms and problems. The inability to perform work properly due to the pain was further expressed, and in some cases quitting working was seen as a solution to the pain. However, such effects on work life with the inability to earn money could result in poverty. Difficulties in providing meals twice a day with no option to earn money due to the disease were expressed. In some case, even money to buy medicine did not exist. Prayers to God for strength to cope with the pain and for increased possibilities to earn money were used. A wish for the government to help poor people and to get recognition for the lack of advanced treatment due to poverty was also expressed.

“I have so much pain, I can’t even work, but I have to do it because of poverty, I have no options.” (Female, 50 years)

“If I had money, I could buy medicines and solve my problems; it all happens because of a lack of money.” (Male, 72 years)

“I have to work anyway and have to suffer very severely, and I can’t even sit down when preparing chapattis.” (Female, 60 years)

“I think that it occurs because of all that previous hard work on the farm to earn money and to fulfill the basic needs of our family; we have to work on the farm continuously.” (Female, 67 years)

“I ignore it, because if I focus on the pain then I cannot get my work done. Because I am a farmer, it is compulsory for me to do farm work.” (Male, 56 years)

Daily activities

Difficulties with balance, lifting heavy objects, squatting, sitting in a cross-legged position, bending, and sitting for a prolonged time in the same position were described. A limping walk was thought of as the result of limitations in putting weight on the affected knees. The quality of sleep was also affected and was often the most significant limitation. More severe sleep disturbances due to sudden locking of the knee as well as morning stiffness were typical complaints.

“Pain increases with cross leg sitting. Squatting also causes severe pain, so I avoid cross leg sitting. I always try to sit in long sitting position.” (Female 67 years)

“While climbing stairs, I can take the first step but have very severe pain in taking the next step; also, I am walking with weight on one leg only.” (Female, 67 years)

“I have a lot of pain while getting up, and there is movement loss in my knee. Then for five minutes I have to try to support myself with the bed, get up slowly, then have to stand for some time, and only then I can take the next step. Otherwise, I couldn’t move without completing all these steps.” (Female, 62 years)

“I only sleep three hours out of 24. I can’t even sleep in the afternoon.” (Female, 70 years)

Discussion

This is, to the best of our knowledge, the first study that explores the patient perspective on approaches toward OA and its management in rural India. It thus provides new information beyond that reported in previous research exploring such perspectives in urban and rural communities in Western high-income countries.

The categories encompass passive or active approaches toward the disease and its management, and the subcategories reflect patients’ daily challenges and efforts underlying these approaches. Thus, our findings indicate that patients with OA in a rural setting in India have their whole life affected by the disease. Similar perceptions have been

described as parts of previous findings among people with OA in Northern-European settings, in terms of a “constant struggling through everyday life” inducing emotional distress (Nyvang, Hedstrom, and Gleissman, 2016; Wride and Bannigan, 2018). Like our participants, approaches among patients with OA in North America, Western Europe, and Australia are influenced by their symptoms, their understanding of the disease, their perceptions of other people’s beliefs toward their disease and their functional capability (Smith et al., 2014a). Thus, it seems like the approaches toward the disease and its management among patients with OA are similar rather than different in several parts of the world. Urban and rural seniors in Canada generally have similar lived experiences of OA, but experiences of access to local care are unique to seniors in rural settings; barriers that may also exist in India but were not explored in the present study (Ali, Walsh, and Kloseck, 2018). A unique finding of our study was poverty as one reason for the perception of a constant struggle. Poverty was perceived to limit possibilities to make informed choices and to afford appropriate management of the disease, as well as to induce a sense of inequality. Another aspect of poverty and limited choices might be poor health literacy (Sorensen et al., 2012). Dealing with such issues represents a major challenge to Indian health professionals (Balarajan, Selvaraj, and Subramanian, 2011). Building health literacy can increase autonomy and personal empowerment, but this requires interactive communication between patients and health professionals, as well as skills to critically analyze and value different types of information (Nutbeam, 2000). Arthritis terminology might represent a particular challenge in communications between health professionals and their patients with different levels of familiarity with and comprehension of the phrases and words used, and it is important to also understand the emotional impact of such phrases and words (Barker, Reid, and Minns Lowe, 2014). Individually tailored communication might not yet be part of physiotherapy practice in hierarchical societies such as India, where neither patients nor physiotherapists might be used to sharing information based on patients’ perspectives on their disease and its management. However, patients’ experiences of quality of care and management of OA in the Western world indicate that relationships with health professionals who truly understand the patients’ perspectives and who tailor and develop self-management plans in negotiation with their patients are important (Miller et al., 2016). Hence,

it is likely that good partnerships between patients and physiotherapists might empower the patients’ own resources, thus supporting better self-management skills to cope with their disease and to manage their perceived challenges and efforts.

Our findings also highlight ergonomic challenges, such as squatting, kneeling and cross-legged sitting, specific to work and daily life in India. These are part of cultural behavior and might therefore be difficult to adapt in all situations. However, living with OA is a balancing act between competing values and risks (Darlow et al., 2018), and this is further supported by our findings, not only regarding work and daily life, but also regarding medication, physical modalities, and exercise, where patients expressed both pros, cons and ambivalence with the different treatments. A mixed but largely negative attitude toward conservative management has also been described in North American, Western European, and Australian settings (Smith et al., 2014b). In the Middle East, health seeking behaviors for pain among people with OA are also described as influenced by cultural, emotional, social and financial needs as well as patients’ expectations, which might lead to non-adherence or negative attitudes toward medical treatment and self-management (Zamanzadeh et al., 2017). Thus, physiotherapists in India might therefore need to educate and empower patients to enhance their informed decision-making regarding best-practice management of OA based on specific Indian cultural behaviors and contexts.

A longing for affinity not only with family and friends, but also with other people with OA, was expressed in our study. The importance of support from family members or other patients in the pathway of care has also been described among females with OA from the Gulf region (Al-Taiar et al., 2013). One way of satisfying this longing could be to introduce peer support through local, regional, and national nonprofit networks that might also lobby for people with OA and provide reliable information about the disease (Opava and Carlsson, 2012). Furthermore, implementation of programs for evidence-based self-management of OA, organized in groups (Allen et al., 2016), could be another way of enhancing affinity and social role-modeling.

Methodological considerations

The methodology used in the present study has strengths and limitations. Most of the interviews were performed in Marathi and translated into English. Since translations might confer a risk of losing nuances, citations were carefully discussed within the research team. However, no cross-checking or reviews of the

audio recordings or transcripts were performed, which might represent a limitation to our study. Another possible limitation is that the interviews for our study were fairly brief. This might reflect the inexperience of rural Indian patients in communicating about experiences and perceptions of their disease or the reluctance to disclose information to a young female researcher. This is a cultural aspect that needs to be addressed in future studies. Keeping a structured reflexive journal could have been useful for the interviewers to sensitize prejudices, subjectivities and preunderstandings potentially influencing the results of each interview. However, the added value of the presence of an experienced physiotherapist and researcher (KK) during some of the first interviews performed in Marathi, was to observe and then later discuss the non-verbal components of the interview in order to inspire GJ to develop skills to enhance patient communication. It might be questioned whether our data were rich enough (Kvale, 2009; Malterud, 2001), but the interviews were performed with many informants and our findings indicated good variation of perceptions that were supported with short but illustrative quotes.

One strength of our study is the involvement of informants with different demographic backgrounds. Relevant background data are presented to make our findings recognizable in a clinical setting and understandable to others. While the setting was rural, not all participants were rural labor workers. The reason for this was to meet our strategic maximum variation sampling method, but also that the initial interviews had to be performed with English-speaking people for logistic reasons. An interesting observation was that many English-speaking university and hospital staff were hesitant to participate, possibly reflecting a reluctance to disclose their disease. A higher representation of women in our study sample reflects the higher prevalence of OA among females in Indian and other Asian populations (Cross et al., 2014; Haq and Davatchi, 2011). The number of participants was not predefined, and the recruitment stopped when no new aspects of the phenomenon under study had emerged during the last interviews. The interviewers were familiar with the population and the context through engagement and observations as physiotherapists. Two experienced researchers in qualitative methods were involved in the data analysis and peer-review of the findings, which strengthens trustworthiness. A qualitative approach does not attempt to generalize the findings to the whole population group, but we believe that our findings can be recognized in similar settings to ours and be useful for health professionals seeing similar patients.

Clinical relevance

Our findings reveal a complex picture of experiences and perceptions to be addressed in physiotherapy practice in India. Thus, acknowledging patient perspectives, using individually tailored communication and simple language might empower patients with OA. Self-management plans negotiated with the patients might improve their handling of challenges and efforts related to OA. The development of culturally adapted, evidence-based self-management programs and support of patient networks might satisfy the wishes for affinity among people with OA as described in the present study.

Future research

In order to better implement evidence-based practice for patients with OA in India, more knowledge about the perspectives among Indian physiotherapists is needed. Intervention and implementation studies on evidence-based physiotherapy for Indian patients with OA are also required.

Conclusion

Daily challenges and efforts, of which some may be unique to patients in a rural setting in India, underlie passive and active approaches to OA and its management. Indian physiotherapists might need to implement evidence-based self-management programs adapted to Indian conditions as well as support the establishment of patient networks to empower their patients and reduce their distress.

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Declaration of Interest

The authors report no conflicts of interest.

References

- Ali SA, Walsh KE, Kloseck M 2018 Patient perspectives on improving osteoarthritis management in urban and rural communities. *Journal of Pain Research* 11: 417–425. DOI: [10.2147/JPR.S150578](https://doi.org/10.2147/JPR.S150578).
- Allen KD, Choong PF, Davis AM, Dowsey MM, Dziedzic KS, Emery C, Hunter DJ, Losina E, Page AE, Roos EM et al. 2016 Osteoarthritis: Models for appropriate care across the

- disease continuum. *Best Practice & Research. Clinical Rheumatology* 30(3): 503–535. DOI: [10.1016/j.berh.2016.09.003](https://doi.org/10.1016/j.berh.2016.09.003).
- Al-Taïar AR, Al-Sabah E, Elsalawy D, Shehab D, Al-Mahmoud S 2013 Attitudes to knee osteo-arthritis and total knee replacement in Arab women: A qualitative study. *BMC Research Notes* 6(1): 406. DOI: [10.1186/1756-0500-6-406](https://doi.org/10.1186/1756-0500-6-406).
- Altman R, Alarcón G, Appelrouth D, Bloch D, Borenstein D, Brandt K, Brown C, Cooke TD, Daniel WD, Feldman D et al. 1991 The American college of rheumatology criteria for the classification and reporting of osteoarthritis of the hip. *Arthritis and Rheumatism* 34(5): 505–514. DOI: [10.1002/art.1780340502](https://doi.org/10.1002/art.1780340502).
- Balarajan Y, Selvaraj S, Subramanian SV 2011 Health care and equity in India. *Lancet* 377(9764): 505–515. DOI: [10.1016/S0140-6736\(10\)61894-6](https://doi.org/10.1016/S0140-6736(10)61894-6).
- Barker KL, Reid M, Minns Lowe CJ 2014 What does the language we use about arthritis mean to people who have osteoarthritis? A qualitative study. *Disability and Rehabilitation* 36(5): 367–372. DOI: [10.3109/09638288.2013.793409](https://doi.org/10.3109/09638288.2013.793409).
- Cross M, Smith S, Hoy D, Nolte S, Ackerman I, Fransen M, Bridgett L, Williams S, Guillemin F, Hill CL et al. 2014 The global burden of hip and knee osteoarthritis: Estimates from the global burden of disease 2010 study. *Annals of the Rheumatic Diseases* 73(7): 1323–1330. DOI: [10.1136/annrheumdis-2013-204763](https://doi.org/10.1136/annrheumdis-2013-204763).
- Darlow B, Auid-Orcid M, Brown B, Thompson B, Hudson R, Grainger E, McKinlay E, Abbott JH 2018 Living with osteoarthritis is a balancing act: An exploration of patients' beliefs about knee pain. *BMC Rheumatology* 2(1): 15. DOI: [10.1186/s41927-018-0023-x](https://doi.org/10.1186/s41927-018-0023-x).
- Das AK, Routray D, Panigrahi TK 2018 Prevalance and risk factors of knee osteoarthritis in rural community of Odisha: A snap shot study. *Journal of Medical Science and Clinical Research* 6(5): 15–21. DOI: [10.18535/jmscr/v6i5.04](https://doi.org/10.18535/jmscr/v6i5.04).
- Dutta S, Lahiri K 2015 Is provision of healthcare sufficient to ensure better access? An exploration of the scope for public-private partnership in India. *International Journal of Health Policy and Management* 4(7): 467–474. DOI: [10.15171/ijhpm.2015.77](https://doi.org/10.15171/ijhpm.2015.77).
- Elo S, Kääriäinen M, Kanste O, Pölkki T, Utriainen K, Kyngäs H 2014 Qualitative content analysis. *SAGE Open* 4(1): 215824401452263. DOI: [10.1177/2158244014522633](https://doi.org/10.1177/2158244014522633).
- Elo S, Kyngäs H 2008 The qualitative content analysis process. *Journal of Advanced Nursing* 62(1): 107–115. DOI: [10.1111/j.1365-2648.2007.04569.x](https://doi.org/10.1111/j.1365-2648.2007.04569.x).
- Felson DT, Lawrence RC, Dieppe PA, Hirsch R, Helmick CG, Jordan JM, Kington RS, Lane NE, Nevitt MC, Zhang Y et al. 2000 Osteoarthritis: New insights. Part 1: The disease and its risk factors. *Annals of Internal Medicine* 133(8): 635–646. DOI: [10.7326/0003-4819-133-8-200010170-00016](https://doi.org/10.7326/0003-4819-133-8-200010170-00016).
- Graneheim UH, Lundman B 2004 Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today* 24: 105–112. DOI: [10.1016/j.nedt.2003.10.001](https://doi.org/10.1016/j.nedt.2003.10.001).
- Haq SA, Davatchi F 2011 Osteoarthritis of the knees in the COPCORD world. *International Journal of Rheumatic Diseases* 14(2): 122–129. DOI: [10.1111/j.1756-185X.2011.01615.x](https://doi.org/10.1111/j.1756-185X.2011.01615.x).
- Hochberg MC, Altman RD, April KT, Benkhalti M, Guyatt G, McGowan J, Towheed T, Welch T, Wells G, Tugwell P et al. 2012 American college of rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care & Research* 64(4): 465–474. DOI: [10.1002/acr.21596](https://doi.org/10.1002/acr.21596).
- Hunter DJ, Schofield D, Callander E 2014 The individual and socioeconomic impact of osteoarthritis. *Nature Reviews. Rheumatology* 10(7): 437–441. DOI: [10.1038/nrrheum.2014.44](https://doi.org/10.1038/nrrheum.2014.44).
- Kvale S 2009 *Interviews: Learning the Craft of Qualitative Research Interviewing* (2nd ed). Los Angeles: Sage Publications.
- Malterud K 2001 Qualitative research: Standards, challenges, and guidelines. *Lancet* 358(9280): 483–488. DOI: [10.1016/S0140-6736\(01\)05627-6](https://doi.org/10.1016/S0140-6736(01)05627-6).
- Miller JL, Teare SR, Marlett N, Shklarov S, Marshall DA 2016 Support for living a meaningful life with osteoarthritis: A patient-to-patient research study. *Patient* 9(5): 457–464. DOI: [10.1007/s40271-016-0169-9](https://doi.org/10.1007/s40271-016-0169-9).
- Nelson AE, Allen KD, Golightly YM, Goode AP, Jordan JM 2014 A systematic review of recommendations and guidelines for the management of osteoarthritis: The chronic osteoarthritis management initiative of the U.S. bone and joint initiative. *Seminars in Arthritis and Rheumatism* 43 (6): 701–712. DOI: [10.1016/j.semarthrit.2013.11.012](https://doi.org/10.1016/j.semarthrit.2013.11.012).
- Nuesch E, Dieppe P, Reichenbach S, Williams S, Iff S, Juni P 2011 All cause and disease specific mortality in patients with knee or hip osteoarthritis: Population based cohort study. *BMJ* 342(mar08 2): d1165. DOI: [10.1136/bmj.d1165](https://doi.org/10.1136/bmj.d1165).
- Nutbeam D 2000 Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International* 15(3): 259–267. DOI: [10.1093/heapro/15.3.259](https://doi.org/10.1093/heapro/15.3.259).
- Nyvang J, Hedstrom M, Gleissman SA 2016 It's not just a knee, but a whole life: A qualitative descriptive study on patients' experiences of living with knee osteoarthritis and their expectations for knee arthroplasty. *International Journal of Qualitative Studies on Health and Well-being* 6 (1): 30193. DOI: [10.3402/qhw.v11.30193](https://doi.org/10.3402/qhw.v11.30193).
- Opava CH, Carlsson A 2012 The role of patient organisations in musculoskeletal care. *Best practice and research. Best Practice & Research. Clinical Rheumatology* 26: 399–407. DOI: [10.1016/j.berh.2012.05.003](https://doi.org/10.1016/j.berh.2012.05.003).
- Pal CP, Singh P, Chaturvedi S, Pruthi KK, Vij A 2016 Epidemiology of knee osteoarthritis in India and related factors. *Indian Journal of Orthopaedics* 50(5): 518–522. DOI: [10.4103/0019-5413.189608](https://doi.org/10.4103/0019-5413.189608).
- Sandmark H, Hogstedt C, Vingard E 2000 Primary osteoarthritis of the knee in men and women as a result of lifelong physical load from work. *Scandinavian Journal of Work, Environment & Health* 73(1): 20–25. DOI: [10.5271/sjweh.505](https://doi.org/10.5271/sjweh.505).
- Singh S, Badaya S 2014 Health care in rural India: A lack between need and feed. *South Asian Journal of Cancer* 3 (2): 143–144. DOI: [10.4103/2278-330X.130483](https://doi.org/10.4103/2278-330X.130483).

- Smith TO, Purdy R, Lister S, Salter C, Fleetcroft R, Conaghan PG 2014a Living with osteoarthritis: A systematic review and meta-ethnography'. *Scandinavian Journal of Rheumatology* 43(6): 441–452. DOI: [10.3109/03009742.2014.894569](https://doi.org/10.3109/03009742.2014.894569).
- Smith TO, Purdy R, Lister S, Salter C, Fleetcroft R, Conaghan PG 2014b Attitudes of people with osteoarthritis towards their conservative management: A systematic review and meta-ethnography. *Rheumatology International* 34(3): 299–313. DOI: [10.1007/s00296-013-2905-y](https://doi.org/10.1007/s00296-013-2905-y).
- Sorensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, Brand H 2012 European consortium health literacy project 2012 health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* 12: 80. DOI: [10.1186/1471-2458-12-80](https://doi.org/10.1186/1471-2458-12-80).
- Vina ER, Kwoh CK 2018 Epidemiology of osteoarthritis: Literature update. *Current Opinion in Rheumatology* 30(2): 160–167. DOI: [10.1097/BOR.0000000000000479](https://doi.org/10.1097/BOR.0000000000000479).
- World Bank 2018 Rural population data. The World Bank Group. <https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?view=map>.
- Wride JM, Bannigan K 2018 'If you can't help me, so help me God I will cut it off myself...' The experience of living with knee pain: A qualitative meta-synthesis. *Physiotherapy* 104 (3): 299–310. DOI: [10.1016/j.physio.2018.04.002](https://doi.org/10.1016/j.physio.2018.04.002).
- Zamanzadeh V, Ahmadi F, Foolady M, Behshid M, Irajpour A 2017 The health seeking behaviors and perceptions of Iranian patient with osteoarthritis about pain management: A qualitative study. *Journal of Caring Sciences* 6(1): 81–93. DOI: [10.15171/jcs.2017.009](https://doi.org/10.15171/jcs.2017.009).
- Zhang W, Moskowitz RW, Nuki G, Abramson S, Altman RD, Arden N, Bierma-Zeinstra S, Brandt KD, Croft P, Doherty M et al. 2008 OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. *Osteoarthritis and Cartilage* 16(2): 137–162. DOI: [10.1016/j.joca.2007.12.013](https://doi.org/10.1016/j.joca.2007.12.013).