PATIENT PERCEPTION ABOUT CHRONIC PAS AND THEIR BEHAVIOURAL MODELS TO PAIN IN TAMIL NADU – A PHENOMENOLOGICAL STUDY

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Abstract:
Background: PAS, often misinterpreted by patients as "frozen shoulder," is a common health risk with various etiologies and stages. There is a significant gap in patient understanding of these nuances, particularly in Tamil Nadu, where socio-economic factors further influence health behaviours and perceptions. **Objective**: This qualitative study aims to explore patient perceptions of PAS in Tamil Nadu and identify behavioural models related to pain management in this population. **Methods**: A series of in-depth interviews were conducted with patients diagnosed with PAS across various socio-economic backgrounds in Tamil Nadu. The data was analyzed thematically to uncover patterns in patient perceptions and behaviours. **Results**: The findings revealed that the majority of patients term all shoulder pains as "frozen shoulder" and are largely unaware of the different stages and etiologies of PAS. A prevalent belief is that diabetes is strongly linked to their shoulder condition, while the lack of physical activity is not commonly associated with the issue. Behaviors regarding pain management are heavily influenced by socioeconomic status and appear to be independent of educational status. Common behaviours include ignorance of the condition and an expectation of automatic healing. Many patients seek medical help, often resorting to self-medication without proper prescriptions. Only a small proportion seek the help of physiotherapists. Additionally, patients frequently turn to online sources for pain management advice. **Conclusion**: The study underscores a significant need for targeted educational interventions to address misconceptions and promote appropriate pain management behaviours among patients with PAS in Tamil Nadu. Socioeconomic status plays a critical role in shaping patient behaviours, highlighting the need for accessible and affordable healthcare solutions.

Keyword: Periarthritis, Shoulder Pain, Qualitative Research, Health Behavior, Physiotherapy, Socioeconomic Factors.

Introduction

In the current scientific understanding behavior towards painful musculoskeletal conditions plays a vital role than the other treatment aspects of the ailment. It has been proved in the past that faulty behaviours or negative behaviour results in increased pain perception and may lead to chronicity of the same. (1–3) With the introduction of bio-psych-social pain models non-medical and non-physical factors have gained more importance in the assessment and management of pain.(4,5) Patient-centered pain management models have been emphasizing a holistic evaluation of the patient not at the micro-structural level but at the macro-social level. This is why in most developed countries patient education becomes more important. (6) However, in developing countries like India, owing to the patient load and poor evidence-based practice, patient education stops with the

narration of primary findings or disease name and a few dos and don'ts. (7) Often patients don't have a clue about what they are suffering with. This scenario is because there is a threatening model of patient management with early administration of drugs that spoils the scope for natural recovery. This approach neglects the importance of understanding the patient's perspective, beliefs, and socio-economic background, which are crucial for effective pain management. In a culturally diverse country like India, these factors play a significant role in shaping health behaviours and outcomes. The lack of awareness and misinterpretation of conditions like PAS as often "frozen shoulder" among patients in Tamil Nadu highlights a critical gap in patient education and the dissemination of accurate medical information. (8,9) Furthermore, the tendency to associate shoulder pain primarily with diabetes, while overlooking the impact of physical inactivity, underscores the need for comprehensive patient education programs that address these misconceptions. (10,11) Patients' reliance on self-medication (12) and online sources for pain management, rather than seeking professional help, further exacerbates the issue. This behaviour is often driven by socio-economic constraints, leading to delayed or inappropriate treatment and poorer health outcomes. The socio-economic diversity in India necessitates a patient-centred approach that goes beyond clinical interventions to encompass educational and behavioural aspects of pain management. Research into patient perceptions and behaviours can provide valuable insights into the barriers and facilitators of effective pain management in this context. Such studies are essential for developing tailored interventions that are culturally sensitive and accessible to all segments of the population. By identifying the specific beliefs and behaviours related to chronic periarteritis shoulder in Tamil Nadu, this study aims to bridge the knowledge gap and inform the development of targeted educational interventions. (13) These interventions can empower patients with the knowledge and skills needed to manage their condition effectively, thereby improving their quality of life. Additionally, understanding the socio-economic determinants of health behaviours can guide policymakers in designing healthcare policies that are equitable and inclusive. Hence there is an urgent need for qualitative research that explores patient perceptions and behaviors related to PAS in India.

Methodology

Study Design

This study employed a qualitative design to explore patient perceptions and behavioural models of chronic PAS in Tamil Nadu. A descriptive phenomenological approach (14) was chosen to provide an in-depth understanding of patients' lived experiences, aligning with the bio-psychosocial model of pain management. The research question was: What are the patients' perceptions about chronic PAS and what are their behavioural models of pain resulting from the same in Tamil Nadu?

Ethical statement

The study was approved by the Institutional Human Ethics Committee at Madhav University, Sirohi, Rajasthan, India. (Date: 12.10.2022, IEC/MU/2023/AHS/39) Informed consent was obtained from all participants before their inclusion in the study. Confidentiality and anonymity were strictly maintained, and participants were informed about their right to withdraw at any stage without any repercussions.

Setting and Participants

Participants were recruited from physiotherapy and orthopaedic clinics across urban, semi-urban, and rural areas of Tamil Nadu. These clinics were selected to ensure representation from diverse socio-economic backgrounds.

Eligibility criteria:

1. Any person self-identified as Tamilians aged 30 years and above of both genders.
2. Any person diagnosed with PAS (without side specificity) by a physician and a physiotherapist.
3. Persons suffering with pain due to PAS for more than 3 months.
4. Persons who can communicate in Tamil or English, were willing to provide informed consent.
5. Patients with coexisting major mental health disorders or severe cognitive impairments were not considered for the study.
6.

Sampling Strategy

A purposive sampling method was adopted to ensure a diverse representation of socio-economic strata, education levels, and treatment-seeking behaviours. The recruitment aimed for approximately 20–25 participants to reach data saturation, with flexibility based on emerging themes.

Recruitment

This phenomenological study aims to depict the diverse lived experiences of individuals from various backgrounds in Tamil Nadu. Participants included patients attending physiotherapy clinics, those receiving only physician consultations without physiotherapy, and community-dwelling individuals who did not engage in any medical assistance or continuous medical assistance. After the patients were identified the research team explained to them about the study and if they were willing to give their unbiased views, they were considered for the study.

Data Collection

Data collection was carried out through in-depth semi-structured interviews conducted by two interviewers (one male and one female) who were prolific in both Tamil and English. The interview guide was developed based on a literature review and expert consultation, focusing on the following domains:

1. Understanding of PAS and its stages.
2. Perceived causes and attributions (e.g., diabetes, lifestyle).
3. Pain management strategies and behaviours.

Interviews were conducted in Tamil or English, as per the participant's preference, and lasted from 15 minutes to 95 minutes however the majority of interviews were 30–40 minutes. They were audio-recorded with prior consent and transcribed verbatim. Field notes were also maintained to capture non-verbal cues and contextual details. Table 1 presents the demographic characteristics of the participants.

Data Analysis

Thematic analysis was employed to identify patterns and themes within the data. The analysis followed Braun and Clarke's six-phase framework:

1. **Familiarization with data:** Transcripts were read and re-read to gain a comprehensive understanding.
2. **Generating initial codes:** Significant phrases and ideas were highlighted and coded systematically.
3. **Searching for themes:** Codes were grouped into potential themes that captured recurring patterns.

4. **Reviewing themes:** The themes were refined and cross-checked against the dataset for coherence and relevance.
5. **Defining and naming themes:** Each theme was clearly defined and contextualized within the study objectives.
6. **Producing the report:** Themes were structured into a narrative to elucidate key findings.

To ensure the reliability and validity of the findings, Triangulation (Data from interviews were cross-verified with field notes and observations) and Member checking (Participants reviewed the preliminary findings to confirm accuracy and authenticity) were adopted.

Table 1 Demographic characteristics of the participants

ID	Age (years)	Gender	Duration (months)	Diabetes (Yes/No)	Side of Involvement	Educational Qualification	Area	Socio-Economic Status*
DM1	45	Male	6	Yes	Right	Completed Schooling	Urban	Upper Middle
NDM2	52	Female	4	No	Left	Graduate	Semi-Urban	Middle
DM3	38	Male	8	Yes	Right	Post Graduate	Rural	Upper Middle
NDM4	60	Female	5	No	Bilateral	School Dropout	Urban	upper Lower
DM5	49	Male	9	Yes	Left	Completed Schooling	Rural	Upper Lower
DM6	42	Female	6	Yes	Right	Graduate	Semi-Urban	Middle
DM7	55	Male	12	Yes	Right	School Dropout	Urban	Lower Middle
NDM8	39	Female	7	No	Left	Completed Schooling	Rural	Lower Middle
DM9	47	Male	10	Yes	Bilateral	Post Graduate	Urban	Upper Middle
DM10	51	Female	5	Yes	Right	Graduate	Semi-Urban	Middle
NDM11	63	Male	6	No	Left	Completed Schooling	Urban	Upper Lower
NDM12	35	Female	9	No	Right	Post Graduate	Rural	Middle
DM13	58	Male	11	Yes	Left	Graduate	Semi-Urban	Upper Middle
NDM14	46	Female	4	No	Right	Completed Schooling	Rural	Lower Middle
NDM15	40	Male	6	No	Left	School Dropout	Urban	Lower Middle

*using Kuppuswamy Scale (15)

Results

This qualitative study explored patient perceptions and behaviors related to chronic PAS among individuals in Tamil Nadu. The analysis identified several interconnected themes,

each shedding light on the nuanced experiences of patients dealing with this condition. The themes are detailed below:

Theme 1: Misconceptions About PAS

One of the most prominent findings was the widespread misunderstanding among patients regarding their condition. Most participants labelled their shoulder pain as a "frozen shoulder" without understanding the stages or different etiologies of the PAS.(16) they were more worried about the cardiac problem when the left side shoulder was affected. This misunderstanding was compounded by the belief that all shoulder problems were strongly associated with diabetes, often leading patients to disregard other contributing factors such as physical inactivity or repetitive strain. There was a classical pain catastrophization observed when patients without diabetes got PAS pain.

"I heard that it's a frozen shoulder that's common among diabetes patients and need not worry as it's not related to heart disease" (DM5)

"I was suffering with left shoulder pain for some time and went to the hospital only to confirm if it was due to cardiac problem and learnt that it was a simple frozen shoulder due to diabetes" (DM13)

"I started getting this shoulder pain ever since I was diagnosed with diabetes a few months back" (DM10) and "I thought my shoulder pain started because my sugar levels were high. No one told me it could be due to the way I was working or sitting." (DM7)

"The doctor told me about stages, but I didn't understand what it meant. I just thought it would go away like a common cold." (DM1)

"Though I don't do any regular exercise am so active throughout my day and I was using both hands. So I feel that lack of movement or exercise may not be the reason for my frozen shoulder. If that was true why did I get it in only one side? (DM9)

Theme 2: Behavioral Patterns in Pain Management

Patient behaviours related to pain management varied significantly across socio-economic strata and educational levels. However, a recurring theme was the tendency to self-medicate. Many participants admitted to relying on over-the-counter painkillers or traditional remedies without consulting a healthcare professional expecting complicated diagnostics.

"I used a balm every time my shoulder hurt. I didn't think it was necessary to see a doctor until the pain became unbearable as I was able to do all my activities of daily living" (DM7)

Patients from lower socio-economic backgrounds were more likely to ignore their symptoms or delay seeking medical attention, often due to financial constraints or a belief that the condition would resolve on its own.

"I have not visited any doctor or hospital in my life as my I was taught by my parents not to go to doctors for every small ache. I waited to see if it goes away first." (DM6)

In contrast, participants with higher educational qualifications were more inclined to seek physiotherapy or medical consultation, though they still lacked a complete understanding of their condition. This variation highlights the influence of socio-economic and educational factors on health-seeking behaviours and pain management practices.

"I had a proper examination by the medical professionals in the hospital and they told me to rest until I had pain and asked me to do simple exercises after the pain subsided with their prescribed medication. But, I don't understand why pain keeps coming the moment I started exercising even after resting sufficiently and taking all the medication "(DM13)

Theme 3: Influence of Socio-Cultural Beliefs

Cultural beliefs and practices significantly shaped patient perceptions and responses to shoulder pain. Several participants expressed a strong reliance on home remedies, such as herbal poultices and massages, often guided by traditional wisdom or advice from elders. One participant explained,

“My mother told me to use hot oil and avoid tubers. It’s what we’ve always done for joint pains”(DM15)

There was also a notable hesitation to adopt prescribed medications or physiotherapy exercises, especially among older participants, due to a preference for natural remedies. This preference was often coupled with a fear of medication side effects or scepticism about modern medical practices.

Gender also plays a crucial role in shaping experiences. Women often reported prioritizing family responsibilities over their health, delaying or neglecting treatment.

“I couldn’t take time off to see a doctor. Who would cook and take care of the children?” (DM6)

Theme 4: Experience with Physiotherapy

Participants shared varied experiences with physiotherapy, highlighting both its perceived benefits and limitations. A common theme was the extensive reliance on electrical modalities such as heat stimulation, ultrasound, and transcutaneous electrical nerve stimulation (TENS). While these treatments provided temporary relief and a sense of comfort, participants noted that they had minimal impact on improving shoulder mobility or overall functional outcomes.

The duration of physiotherapy sessions was another concern. Most participants reported being prescribed short courses of 7, 10, or 14 days, which they felt were insufficient to address their chronic condition. Participants also expressed dissatisfaction with the lack of supervised exercise sessions during physiotherapy. Although home exercises were frequently recommended, there was limited guidance or follow-up to ensure they were performed correctly. Many participants believed that the emphasis on passive treatments and the lack of focus on active rehabilitation contributed to their limited progress.

“The heat pads and machines made my shoulder feel better, but I still couldn’t lift my arm properly.” (NMD15)

“They gave me a sheet with exercises to do at home, but I wasn’t sure if I was doing them right. I feel it would have been better if they made me do it under their supervision.”(DM15)

“After 10 days of therapy, the pain was still there. They stopped the sessions and said to continue exercises at home.” (DM10)

“I went to therapy hoping to regain my movement, but most of the time was spent on machines. I wish they had focused more on exercises that could improve my shoulder.”(NDM12)

Theme 5: The Role of Socio-Economic Status

Socioeconomic status, as assessed using the Kuppuswamy scale, emerged as a pivotal factor influencing patient behaviours and outcomes. Participants from upper-middle and middle-income groups were more likely to access specialized care, including physiotherapy and orthopaedic consultations. In contrast, those from lower-income groups relied heavily on self-medication and traditional remedies.

“I believe if I go to the doctor they will ask me to do unnecessary test procedures and threaten me with poor consequences” (NDM11)

“I earn about Rs. 500 per day and cannot afford physiotherapy or costly diagnostics and medication” (NDM4)

Theme 6: Impact of Chronic Pain on Quality of Life

Chronic pain associated with PAS had a profound impact on participants' physical, emotional, and social well-being. Many participants reported difficulty performing daily tasks, such as cooking, dressing, or lifting objects, leading to frustration and a sense of helplessness. *"I couldn't even comb my hair, or wear my shirt as it was so painful, and I felt like having only one hand for all my daily activity."* (DM9)

The emotional toll was also significant. Several participants described feelings of anxiety, depression, and irritability due to their persistent pain. One woman remarked, *"I felt so low because I couldn't do anything. I was always angry and snapping at my kids. Even slight stress from family members used to trigger my pain*"(DM6)

Social isolation was another common issue, particularly among participants who had to give up their jobs or hobbies due to their condition. A male participant stated, *"I stopped going to the market because I could not carry anything. It's not paining always but when I use my hand in a particular position or when I move it fast it hurts and at that time I feel hell and ashamed and felt like I was losing my independence*." (DM10)

Discussion

This study provides a comprehensive understanding of the perceptions and behaviours of patients with chronic peri arthritis shoulder in Tamil Nadu. Through a qualitative approach, the themes identified offer valuable insights into patient misconceptions, behaviours, socio-cultural influences, and experiences with healthcare, particularly physiotherapy. There were only a few qualitative studies reported on chronic peri arthritis shoulder globally (17–21), but none from India to our knowledge.

Theme 1: Misconceptions About Periarthritis Shoulder

The study revealed a significant lack of awareness among patients regarding PAS, its stages, and its underlying causes. Many participants equated all shoulder pain with a "frozen shoulder," failing to differentiate between the prognosis. These results from India do fall in line with previous qualitative analysis performed by Jones et al. who insisted that not only the patients but some health professionals should also update their knowledge about the recent updates on PAS.(17) The predominant belief that diabetes is the primary cause of the condition further reinforces these misconceptions. Previous literature states that there are many myths and misconceptions surrounding diabetes which need to be educated among patients living in developing countries.(22) These findings highlight the critical need for structured patient education to bridge knowledge gaps. (23) Health professionals should take time to explain the condition's stages and contributing factors, ensuring patients understand the importance of physical activity and early intervention. Educational initiatives delivered through community programs, healthcare centres, and digital platforms could help combat misinformation and promote timely treatment-seeking behaviour.(24)

Theme 2: Behavioral Patterns in Pain Management

Patients' behaviours exhibited considerable variation, shaped by socioeconomic status, education, and gender. (25) Commonly observed among these chronic pain patients were maladaptive behaviours that potentially exacerbated their condition. During interviews, the frequent use of intense and emotionally charged language to describe their pain underscored the chronic nature of their condition. These expressions suggested a tendency toward pain catastrophization and indicated potential central sensitization, emphasizing the complex interplay between psychological and physiological factors in chronic pain experiences. Only two patients reported that rest and medication may not be a

solution and they reported that they received pain education from a Physiotherapist, which they reported changed their perception of pain and made them avoid apprehensive though about movement and activity. (26)

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Theme 3: Influence of Socio-Cultural Beliefs

Cultural and gendered expectations strongly influenced how participants approached their condition. Women often delayed seeking care due to family responsibilities, while older patients relied heavily on traditional remedies, prioritizing them over modern treatments. Participants also expressed a preference for “natural” approaches, fearing the side effects of medications. Healthcare providers need to incorporate culturally sensitive practices into their care. Engaging family members in the care process, providing reassurance about the safety and efficacy of evidence-based treatments, and integrating traditional practices with modern therapies where feasible can improve adherence. Gender-specific programs that accommodate women’s schedules and responsibilities may also enhance access to care. (27)

Theme 4: Experience with Physiotherapy

Few participants frequently criticized the overuse of passive modalities in physiotherapy, such as heat stimulation and TENS, which provided temporary relief but failed to address functional recovery. Short treatment durations and inadequate supervision for home exercises further limited the effectiveness of physiotherapy interventions. These findings highlight the need for physiotherapy programs to adopt active, patient-centred approaches. Incorporating supervised exercise sessions, longer treatment plans, and outcome-based progress evaluations can enhance treatment effectiveness.(24,28) Physiotherapists should emphasize active rehabilitation techniques, educating patients on the role of exercises in restoring shoulder mobility and function. These interventions can help improve long-term outcomes and reduce recurrence.

Theme 5: Barriers to Seeking Professional Help

Barriers such as financial constraints, lack of awareness, and logistical challenges were particularly pronounced among rural and lower-income participants. Limited access to physiotherapy services and dissatisfaction with rushed consultations further exacerbated these issues. Policymakers and healthcare organizations must address systemic barriers to healthcare access. Establishing satellite physiotherapy units in rural areas, subsidizing treatment for low-income patients, and offering telerehabilitation services can improve accessibility. Additionally, clinicians should allocate sufficient time for consultations to build trust and ensure patients understand their treatment plans.

Theme 6: Impact of Chronic Pain on Quality of Life

Chronic shoulder pain significantly affected participants’ physical, emotional, and social well-being. Functional limitations hindered daily activities, while emotional distress and social isolation compounded the burden of living with the condition. This theme underscores the importance of a holistic approach to pain management that addresses physical, psychological, and social dimensions. Multidisciplinary care involving physiotherapists, psychologists, and social workers can improve the quality of life for these patients. Additionally, group therapy or peer support programs may help alleviate feelings of isolation and provide emotional support. (29,30)

Limitations of the Study

The qualitative design limits the generalizability of the findings to larger populations. The small sample size, though sufficient for thematic saturation, may not

capture all variations in patient experiences. Second, the study relied on self-reported data, which may be subject to recall bias or social desirability bias. Third, the absence of a control group or comparison with other regions restricts the ability to contextualize findings within broader demographic trends.

Scope for Future Research

Quantitative studies with larger, diverse populations can validate these qualitative findings and explore their prevalence. Research into the effectiveness of culturally tailored educational interventions and physiotherapy models could inform best practices. Additionally, exploring the perspectives of healthcare providers, including physiotherapists and general practitioners, may provide insights into systemic barriers and potential solutions. Lastly, evaluating the role of telerehabilitation and digital tools in bridging access gaps for rural and economically disadvantaged populations is a promising area of study.

Conclusion

This study provides valuable insights into the perceptions, behaviours, and challenges faced by patients with peri arthritis shoulder in Tamil Nadu. The themes identified highlight the critical need for patient education, culturally sensitive care, and systemic reforms to improve access and outcomes. By addressing these gaps, healthcare providers and policymakers can better support this population, enhancing their quality of life and reducing the burden of chronic shoulder pain. Future research and interventions should prioritize inclusivity, accessibility, and cultural relevance to achieve these goals.

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