



Original article

People's beliefs about the meaning of crepitus in patellofemoral pain and the impact of these beliefs on their behaviour: A qualitative study



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ABSTRACT

Background: A feature of patellofemoral pain is joint crepitus. Several causes of crepitus have been described, but previous research has focused on the pathological meaning of crepitus. No research has demonstrated a definitive link between noise and pathology and its importance and meaning to patients is unresearched.

Objective: To explore the beliefs of patients with non-osteoarthritic patellofemoral pain regarding their crepitus, and how this impacts on their behaviour.

Design: Qualitative design using semi-structured interviews.

Method: A general inductive approach was used as this is a previously unresearched topic. Underpinned by the health beliefs model, an interview schedule was used to reflect different elements. Inductive thematic analysis was used to generate themes to represent the dataset.

Participants were 11 patients diagnosed with non-osteoarthritic patellofemoral pain, crepitus as one of their symptoms, referred to an outpatient clinic.

Results/findings: Three key themes emerged all with sub-themes within them. Firstly, belief about the noise had a sub-theme of search for and perceived meaning of noise. Symbolising ageing was another sub-theme whereby participants described feelings of premature ageing. The final sub-theme was emotional response with participants feeling a range of negative emotions. The second theme of the influence of others reveals participants describing two distinctly different relationships, one with friends and family and one with professionals. The final theme was avoiding the noise. A sub-theme of altering movement shows participants describing fear-avoidant behaviour.

Conclusion: Crepitus is a poorly understood symptom that creates negative emotions, inaccurate etiological beliefs and ultimately leads to altered behaviour.

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1. Introduction

About 25% of people will have patellofemoral pain (PFP) at some point in their life (McConell, 1996). A feature of PFP is joint crepitus – creaking and cracking of joints on movement. Patellofemoral pain and associated crepitus is commonly experienced during running, squatting, stair climbing, sitting, and kneeling (Thomee et al., 1999). Crepitus is usually described by patients as ‘grinding’, ‘creaking’, ‘clunking’, and is an extremely common sign and symptom in PFP. Several causes of crepitus have been described (Heuter, 1885; Hutton, 1967; Beverland et al., 1986), but previous

research has focused on the pathological meaning of crepitus. No research has demonstrated a definitive link between noise and pathology, and McCoy et al. (1987) demonstrate that 99 percent of a cohort of subjects with no pain had patellofemoral crepitus. Overall its importance and meaning is unclear. Furthermore, crepitus is often present in the complete absence of any joint pathology (Robertson, 2010). Physiotherapy is recommended as an early treatment for this large patient population, so it is important that crepitus is understood better, in order that people receive the most effective and efficient physiotherapy treatment (Van Dijk, 2008). There are many other health professionals who will regularly encounter patients with PFP, for example, G.P.'s, rheumatologists and orthopaedic surgeons. This study should be of interest to those professionals looking to provide evidenced based practice.

Pathophysiological changes and consequences have been the primary interests of most research into PFP. Despite patients being

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much more concerned by the consequences PFP has on their activities of daily living and quality of life, there is very little “patient-centred” research in PFP and nothing about the importance that crepitus has on people’s health beliefs and behaviour. For example, patients rarely comment on the timing of recruitment of knee musculature (the focus of much pathophysiological research in this area), but are more concerned with the impact of the problem on their function, such as stair climbing.

This study draws on a conceptual model informed by the health beliefs model (Becker, 1974), that patients belief system about their health and what impacts on it will affect their overall outcome. This model is ideal for this study because central to this study are the constructs of health and beliefs of the end user. The health beliefs model is a psychological model focused on the intrapersonal beliefs, in this instance the beliefs within each participant about their crepitus and how it impacts on their behaviour. Health beliefs are well documented with respect to low back pain (Wertli et al., 2014), but not at all with respect to crepitus in patients with PFP. Therefore it is important to explore where patients derive their health belief about crepitus, and understand if negative, erroneous messages are reinforced by clinicians.

In order to research this novel topic, and explore health beliefs, qualitative research was chosen in order to allow flexibility and ensure the patient’s perspective was explored. This work can be considered as phenomenological as it is aiming to explore the lived experience of patellofemoral crepitus, to patients. In order to ensure the design of this study was robust, the investigators used the COREQ checklist to ensure all elements of the research team, the theoretical framework, participant selection, setting, data collection and analysis were considered when planning the study.

This study explores the consequences of crepitus, patients beliefs and reasoning about how this overt, disquieting joint crepitus affects people’s understanding about the symptom, what it means to their problems, prognosis and how this affects their subsequent behaviour. It will provide greater insight into the real life experiences of this large but under-researched patient group, switches the focus to the biopsychosocial model of healthcare for this patient group (Engel, 1977) and puts the patient at the centre of treatment and research (Stewart, 2001). This will benefit people with PFP, physiotherapists pursuing improved clinical outcomes, and Physiotherapy as a profession. The specific research question for this study was:

What are Patient’s beliefs about the meaning of crepitus in PFP and how does it impact on behaviour?

The overarching aim of this study is to help aid insight for those involved with the assessment and treatment of patients with PFP through new understanding of this topic. This new understanding is underpinned by patient-centred care, aimed at enhancing the clinician–patient relationship, communication and facilitates patient involvement in their care, (Epstein and Street, 2011). It will also stimulate a new direction in PFP research.

2. Method

2.1. Design

Both a deductive and a general inductive approach was used. The deductive approach was answering the question of whether patients alter their behaviour in response to their crepitus. The general inductive approach explored the beliefs as this is a previously unresearched topic. Semi-structured in-depth interviews were performed by X, a female researcher, (MSc PGCE MCSP) who is both a clinical physiotherapist and experienced researcher. All interviews were carried out by the lead researcher in the same room at a private clinic. No one else was present. All interviews were

recorded on an audio digital recorder, contemporaneous notes taken where necessary and later transcribed verbatim, and assigned pseudonyms. No notes were taken at the time to ensure that conversation flowed as was uninterrupted, but field notes were made after each interview. Underpinned by the health beliefs model, an interview schedule was used to reflect different elements to be covered:

1. Can you tell me what words you use to describe the (noise) in your knee?
2. How does it make you feel?
3. Does pain alter your feelings about your (noise)?
4. What do you think it means? Have you tried to find out what the (noise) means?
5. Have you discussed your joint (noise) with any health professionals?
6. Has anyone other than a health professional commented on the (noise)?
7. Do you have any blood relative with knee problems? Does this alter how you think about your knee?
8. Do you avoid anything because of your knee (noise)?
9. Have you changed or modified anything because of your knee (noise)?

Point 7. Was added after three interviews as the first three participants all mentioned family members with knee problems.

Although the interview schedule was a guide, the interviews were semi-structured to permit free-flowing conversation. In keeping with the research question, particular focus was placed on exploring the patient’s beliefs about crepitus, and how their behaviour had adapted. No repeat interviews were performed. Each interview was approximately 45 min in duration. The transcripts were not returned to the participants as there was no ambiguity and it was felt unreasonable to further bother the participants with reading a lengthy transcript.

2.2. Participants

Purposive sampling was used to select a group of patients with non-osteoarthritic PFPs. The patient’s eligible for this study were patients referred to a private clinic specializing in musculoskeletal care. Patients were included if they were adults, (>18) who could understand and speak English, with a clinical diagnosis of PFP, and were able to commit to up to 45 min interview, with recording. They were excluded if they were under 18 years of age, had referred pain from the spine and or hip, tibiofemoral pathology of any nature on the ipsilateral side, or osteoarthritis of the PFJ as diagnosed on x-ray or MRI. All participants were approached by telephone regarding participating and the researcher X explained about the goals of the study. No other relationship was formed between the researcher and participant prior to the interview, and none had received treatment at the clinic prior to their interview. All participants gave written consent after full verbal and written information about the study.

2.3. Data analysis

Inductive thematic analysis was used to generate themes to represent the dataset (Braun and Clarke, 2006, Bailey, 2007). Thematic analysis is a flexible research technique that provides a rich and detailed account of data (Braun and Clarke, 2006), but acknowledges the potential influence of the researcher. Thematic analysis allows the analyst to theorise individual motivations and perceptions, in a relatively straightforward manner, as it assumes that language is a true representation of meaning and experience

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