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Patient experiences with physiotherapy for knee osteoarthritis in Australia – a qualitative study

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3 **Title: Patient experiences with physiotherapy for knee osteoarthritis in Australia – a**
4 **qualitative study**
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Abstract

Objective: Physiotherapists commonly provide non-surgical care for people with knee osteoarthritis (OA). This study aimed to explore the experiences of people who had recently received physiotherapy care for their knee OA in Australia.

Design: Qualitative study using semi-structured individual telephone interviews and thematic analysis. Questions were informed by seven quality statements of the Australian government's OA of the Knee Clinical Care Standard.

Setting: Participants were recruited from around Australia via Facebook and our research volunteer database.

Participants: Interviews were conducted with a sample of twenty-four people with recent experience (prior six months) receiving physiotherapy care for their knee OA in Australia. They were required to be aged 45 years or above, had activity-related knee pain and any knee-related morning stiffness lasted no longer than 30 minutes. Participants were excluded if they had self-reported inflammatory arthritis and/or had undergone knee replacement surgery for the affected knee.

Results: Six themes emerged. 1) Participants arrived at physiotherapists with a pre-existing OA diagnosis and were comfortable with their established knowledge about OA; 2) Physiotherapy was accessed through various referral pathways, funding models and modes of delivery; 3) Physiotherapy care was sought for various reasons but commonly knee pain and functional impairments; 4) Physiotherapy care focussed on function and exercise and often involved adjunctive treatments but advice about surgery, medications and injections were perceived as beyond physiotherapists' scope of care; 5) Participants were happy and satisfied with their

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3 physiotherapy experiences, describing trust and/or confidence in their physiotherapists and valuing
4 personalised care; 6) Participants believed surgery was inevitable for their knee OA.
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8 *Conclusion:* These results provide evidence from the patients' perspectives about the important
9 role physiotherapists play in the care of Australians with knee OA. Improved funding models and
10 pathways for accessing physiotherapy care appear to be needed.
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16 **Strengths and limitations of this study**

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- 18
- 19 • Qualitative research was used to explore the experiences of people receiving physiotherapy
20 care for knee OA in Australia.
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- 22 • A range of participants was interviewed, including males and females of differing age,
23 occupational status, and geographical location across Australia.
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- 25 • Participants responded to advertisements and/or email invitations to participate and thus our
26 sample may be biased towards those who had favourable experiences with physiotherapy
27 and/or were successful at accessing physiotherapy.
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- 29 • Our sample was constrained to participants who could speak English so may not represent the
30 experiences of people from culturally and linguistically diverse backgrounds.
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- 32 • Physiotherapists are a primary contact health profession in Australia so patient experiences
33 with physiotherapy care for knee OA may be different in other countries where people can
34 only access a physiotherapist on referral.
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3 Knee osteoarthritis (OA) is highly prevalent and a leading cause of pain and disability worldwide.

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3 about the factors that influence patient experiences with health care providers, it did not explore
4 specifically experiences with physiotherapy care.
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8 Thus, the purpose of this qualitative study was to explore the experiences of people who had
9 recently received physiotherapy care for their knee OA in Australia. Such information will help
10 enhance our understanding of patient expectations about physiotherapy care for their condition and
11 may help inform strategies to improve future care and service delivery.
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17 18 **Method**

19 20 *Design*

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22 This qualitative study was based on a constructivist paradigm, where knowledge is built through
23 active experience and interpretation.(11) The Consolidated Criteria for Reporting Qualitative
24 Research checklist was used to ensure explicit and comprehensive reporting of this study.(12)
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30 31 *Patient and public involvement*

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33 Patients or the public were not actively involved in the design, conduct, reporting or dissemination
34 plans of our research.
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39 40 *Participants*

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42 People who had sought physiotherapy care to manage their knee OA were recruited from around
43 Australia via Facebook and our research volunteer database. Inclusion criteria for participants
44 were: i) met the National Institute for Health and Care Excellence OA clinical criteria (1) (aged 45
45 years or above, had activity-related knee pain and any knee-related morning stiffness lasted no
46 longer than 30 minutes); and ii) consulted a physiotherapist about their knee OA in the prior 6
47 months. Participants were excluded if they had self-reported inflammatory arthritis and/or had
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undergone knee replacement surgery for the affected knee. The final sample size was determined by the principles of data saturation, this being when no new themes emerged from the data.(13) Participants provided written informed consent and ethical approval was granted by the School of Health Sciences Human Ethics Advisory Group, University of Melbourne.

Interviews

Semi-structured interview guides (Table 1) were developed, informed by the quality statements of the Australian Government's OA of the Knee Clinical Care Standard.(14) It defines seven domains of care that people with knee OA should expect to receive, regardless of where they are treated in Australia, spanning comprehensive assessment, diagnosis, education and self-management, weight loss and exercise, medications, regular review and surgical options for people with knee OA. Participants were reimbursed for their time with a \$50 gift card.

Table 1: Semi-structured interview guide.

Topic	Question
Introduction	1) Can you tell me about your experiences attending physiotherapy for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>What prompted you to seek physiotherapy care?</i>
	2) Can you tell me, where did you see the physiotherapist(s)? <ul style="list-style-type: none"> ○ <i>How did you end up seeing a physiotherapist?</i>
Comprehensive assessment	3) Can you tell me how the physiotherapist assessed you and your knee problem? <ul style="list-style-type: none"> ○ <i>What sort of questions did the physiotherapist ask you?</i> ○ <i>What sort of physical examination did the physiotherapist do?</i> ○ <i>What other health conditions or social factors that might affect how you manage your knee pain (for example, changing work) did the physiotherapist assess?</i> ○ <i>What sort of questionnaire, survey or form did the physiotherapist ask you to complete?</i>
	4) What was the main problem you were seeing the physiotherapist for? <ul style="list-style-type: none"> ○ <i>How well did the physiotherapist understand the main problems you were experiencing for your knee?</i>
	5) How did the physiotherapist decide that you have knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>What sort of tests or scans did the physiotherapist order for your knee osteoarthritis?</i> ○ <i>How did the physiotherapist explain/help you to understand your diagnosis?</i>
	6) What sort of treatments did the physiotherapist give you for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist provided you with any hands-on treatment or used any machine/device on your knee?</i>

	<ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist advised you on the use of knee brace, walking aid or taping for your knee problem?</i>
	7) Can you tell me what you remember about any information/advice you received from the physiotherapist for your knee osteoarthritis?
Weight loss & exercise	8) What exercise did the physiotherapist suggest you try? <ul style="list-style-type: none"> ○ <i>How did the physiotherapist consider your needs and preferences when deciding on the best exercise program for you?</i>
	9) Could you tell me if weight is an issue for you? If so, what weight loss treatment did the physiotherapist suggest you try?
	10) Can you tell me if the physiotherapist discussed with you the importance of maintaining healthy body weight for your knee osteoarthritis?
Medications	11) Can you tell me if you are taking any medications to manage your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if you asked the physiotherapist ways to manage your medications?</i> ○ <i>Is there a reason why you didn't ask the physiotherapist about medications for your knee?</i>
	12) What information/advice did the physiotherapist provide about medicines/drugs for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist spoke about any injection you could get for your knee?</i>
Patient review	13) Can you tell me how often you saw the physiotherapist for your knee problems? <ul style="list-style-type: none"> ○ <i>How many times did you see the physiotherapist for your knee?</i> ○ <i>How frequently do you see the physiotherapist now?</i> ○ <i>What did the physiotherapist advise you to do if your problems get worse?</i>
	14) Which other health professional did the physiotherapist recommend you see for your knee problem? <ul style="list-style-type: none"> ○ <i>How did you go with the recommendation?</i>
Surgery	15) Can you tell me if you have considered any sort of surgery for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist asked you about your thoughts of having any knee surgery?</i>
	16) What information/advice did the physiotherapist provide about surgical treatments for your knee osteoarthritis?
Concluding remarks	17) Is there any other aspect about your physiotherapy care you would like to discuss?
	18) Do you have anything else to add?

Individual interviews were conducted via telephone by PLT, a female graduate research student and physiotherapist trained in qualitative methodologies. Telephone interviews were conducted to facilitate participation of people with knee OA from Australia (irrespective of geographical location) and to promote a perception of anonymity in interviewees.⁽¹⁵⁾ Interviews were audio recorded and transcribed verbatim by an external provider. Pseudonyms were assigned to participants for confidentiality.

Data analysis

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3 An inductive thematic approach was used (16). First, the student researcher (PLT) and another
4 post-doctoral researcher (BJL) with expertise in qualitative methodologies (and who is not a
5 physiotherapist) individually read each transcript. Next, they re-read and inductively coded each
6 transcript to identify topics and initial patterns of emerging ideas. They then compared codes and
7 grouped similar topics/ideas into categories before organising them into broader themes and sub-
8 themes. These were further reviewed and discussed with the broader research team (RSH, KLB,
9 TE). The senior researcher (RSH) read all transcripts prior to discussion to ensure data credibility
10 and confirmability. Analysis was performed using standard word processing software.(17)
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22 **Results**

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24 Table 2 describes the 24 participants interviewed. Three-quarters were female and the mean
25 (standard deviation) age was 64 (10) years (range 49 to 81). Participants resided in all of
26 Australia's six states and two territories. Most lived in major cities (79%), with some from outer
27 regional (13%) or inner regional areas (8%). Most (67%) people reported less than five sessions
28 of physiotherapy for their knee OA in the prior 6 months, some (25%) between five to nine and
29 two (8%) reported ten or more sessions.
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40 **Table 2: Characteristics of the patients (n=24).**

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42 PT: Physiotherapist

43 ACT: Australian Capital Territory; NSW: New South Wales; NT: Northern Territory; Qld: Queensland; SA: South Australia; TAS: Tasmania;
44 Vic: Victoria; WA: Western Australia.

45 *Classification based on residential postcode, in accordance with Australian Standard Geographical Classification.

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47 † Measured by 11-point numeric rating scale (0 = no pain, 10 = worst pain possible), where patients rated the average amount of their knee pain
48 over the past week.

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50 ‡ Measured by Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), where pain scores range from 0 to 20 and physical
51 function scores range from 0 to 68 (higher scores indicate worse pain/poorer function).

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53 § Number of physiotherapy sessions attended by patient for their knee osteoarthritis over the last six months

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55 ¶ Number of physiotherapist(s) consulted by patient for their knee osteoarthritis over the last six months
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Six themes emerged which are outlined in Table 3 and described below.

Table 3: Themes, subthemes and exemplary quotes from the patient interviews.

Theme 1: Presented with a pre-existing osteoarthritis diagnosis	
<i>History of seeking care for osteoarthritis elsewhere</i>	<p>Harry: "I got my MRI scan and I took it back to the doctor and it showed that I had osteoarthritis, that it was very inflamed, that my cruciate ligament resembled a celery stick and he got me to go to see the physio."</p> <p>Dominic: "My knees got really bad about last July and I went to see a surgeon with the possible view of having replacements done. The diagnosis for both knees were bone on bone. He didn't feel that I was severe enough to warrant surgery at that time, so on further discussion, he suggested that I go to physiotherapy to strengthen my legs. So, I went to a local physiotherapist."</p> <p>Jade: "I've had the experience with the osteoarthritis for about eight or nine years and first of all, I went to a knee specialist and then I went to a sports medicine specialist and orthopaedic surgeon. I did that for about eight or nine years and recently, I've been to a physiotherapist for the Good Life with osteoarthritis: Denmark (GLA:D) program*."</p>
<i>Perception of adequate OA knowledge</i>	<p>Alice: "I think I have a fairly good understanding of what osteoarthritis is. I understand that I have damage to the articular cartilage of my kneecap and medial femoral condyle. I have very little cartilage at all and that's rubbing. To be honest, I didn't need him [the physiotherapist] to explain all of that."</p> <p>Peter: "The physiotherapist saw the x-rays and they have training in interpreting x-rays like that for degenerative bone disease such as osteoarthritis, cartilage wear and things like that. I was well aware that I had osteoarthritis, so I don't think he did anything to explain the osteoarthritis because I was fairly well aware of what it was on about."</p> <p>Gordon: "It's just basically wear and tear, and it's really bone on bone. The surgeon explained it to me, too. He sat me down with him at his computer looking at the MRI. It's little fragments of bone and stuff that are rubbing against each other and disintegration of your bone in your patella plus around your knee. Because there's no blood flow in that area, it doesn't heal."</p>
Theme 2: Varying models of physiotherapy care	
<i>Referral pathways</i>	<p>Dylan: "Initially I went to the orthopaedic surgeon and it was deemed that surgery is inappropriate at the moment because of age and probably not severe enough to warrant a replacement. I [was referred by the surgeon to] the osteoarthritis [chronic care program]. The [osteoarthritis] chronic care program[†] was really an intermediary or, hopefully, a step to prevent requiring a knee replacement as such."</p> <p>Abby: "I mentioned to my doctor I'm getting these sore knees, she said, you should try Kieser[‡]. I knew it was up the road, my friend went there, and my doctor said it could be a good idea."</p> <p>Cathy: "I just chose them [the physiotherapy centre] because I knew they did Pilates and exercise rehab, so that's why I went there. And they were close to home."</p> <p>Ryan: "My doctor recommendation. I got on this Enhanced Primary Care Plan[§] where they recommend a physiotherapist."</p>

Funding models

Bianca: "I had an accident at work a few years ago. I suffered quite a bit of pain and I was referred to a specialist, and he did an arthroscopy. Then I was doing follow-up physiotherapy after the arthroscopy. The surgeon did another arthroscopy and I followed up with more physiotherapy - and started doing hydrotherapy under a physiotherapist. I was doing those sessions on a regular basis. WorkCover then ceased to cover me, and so I was doing them myself out-of-pocket."

Reese: "I went to my general practitioner and got the five treatments that you can get from the government for chronic illness. [With] the care plan you only get five treatments, but then I've got private health insurance, so I saw him under that as well."

Leanne: "I had ancillary benefits at that stage and I only got about five treatments covered by that ancillary benefits with Medibank Private. I couldn't afford the ancillary benefits anymore so, no, I won't go to a physio now."

Individual vs group sessions

Alice: "The most recent physio visit was with a new physio because I was having a bicycle fit, and as part of the bike fit the physio did a full-on assessment so he talked more about osteoarthritis as well. I've only seen him once."

Cathy: "I didn't see an individual physio for individual sessions in the last six months. I was always in group sessions. It's a general fitness class but it's mainly for menopausal age group. So, everyone has their own set of problems. It's not tailored just for one problem; it's tailored for everyone."

Dominic: "I went to a local physiotherapist and they did sort of two sessions of assessment. And then I started going to regular weekly classes."

Jade: "Recently this year, I've been to a physiotherapist for the GLA:D* program. As part of the GLA:D* program, we had to do an education program and so she [the physiotherapist] showed us a diagram of the knee and explained how different things get worn out and rough. There were six different exercises in the GLA:D* program."

Theme 3: Varied reasons for seeking physiotherapy care

Knee symptoms

Abby: "My knees were becoming sorer and clicking as I walked, particularly up sets of stairs. And I have a lot of stairs at work. So, I thought I need to go and talk to a physio about it."

Kate: "I had an ongoing knee problem and the pain was just killing me. I would be in tears with the pain. I went to the doctor; they were giving me anti-inflammatory tablets, they were not working. So, I said is there anything I can do, will physio help, and the doctor sent a referral to the physio."

Cathy: "Well, it was for knee pain that I wanted to go and build-up the strength in my legs to try and avoid surgery. I've lost capacity to squat and things like that; I've lost a lot of strength in my right leg and my legs have become quite bowed."

Functional problems

Leanne: "I think she understood what my concerns were that I couldn't get upstairs. I couldn't drive the car because of the clutch and the knee pain. She looked at all those things and helped me with them."

Maggie: "I told her [the physiotherapist] that my foot turns in. I also told her that my knee crunches. I can manage the pain but going up and down stairs is one of the problems that I've got."

Ryan: “Well I told him [the physiotherapist], I said, look, I just want to get back surfing properly and snowboarding and skiing. I said I realise I’m 72 years old and it’s not going to be easy and they said, oh no, no problem we can do it.”

Theme 4: Physiotherapist management focussed on function and exercise

Assessment of function

Dylan: “Timing or just observing, getting in and out of a chair. Walking a set distance, I think it might have been like 100 metres and they time that. And then, there was going up and down stairs and they had some sort of a measurement with that. Then, over time would repeat that and see if there was any improvement.”

Abby: “He watched me from a seated position to standing. He looked at my movements. We went out the back and I did a lot of walking up and down, and they had a staircase of about three or four steps, and he watched where the pain happened there. He had me practicing, in particular, the way I walk up and down stairs to make sure that through my feet, I was balancing the weight and not throwing to one side.”

Dominic: “They were measuring how far I could bend my legs laying down and standing up. Squats. Doing steps. They found that I was bending knees. I wasn’t walking correctly, but I was doing that to relieve the pain. They got me stepping up correctly with a straight leg. I think she made a record of all of her findings and then set these exercises to hopefully relieve some of the pain and strengthen my leg muscles.”

Various types of exercises prescribed

Abby: “He gave me an exercise program, just some gentle swinging of the knee initially, and then I built it up to other types of exercise. He had me practicing the way I walk up and down stairs, then we looked at me doing some kicking, gentle kicking with the board and gentle deep water running as opposed to doing the structured classes.”

Dominic: “Other than exercise machines that they had in-house, there was elastic stretching band and she told me to do elliptical trainer at home and a cycle machine. I’ve got a list here. Its straight leg raise, bridging, clams, ball squeezes, sit to stand, lunges, calf raises ballet style, step-ups, go on the bike, and balance exercise.”

Cathy: “I was doing Pilates, then I was doing Fit-Right classes. We did lots of clams with weights and off-weights. I did a lot of [reformer] where I sat on a spring-loaded box.”

Surgery, medications, and injections are for doctors

Dylan: “I think it’s the rheumatologist or my general practitioner who would be issuing the drugs so I didn’t think that would be physio. I don’t think meds ever really was their [the physiotherapists’] jurisdiction.”

Ryan: “The physio doesn’t want to go into the drug side of it because of the risks. Why would he change it as regards something as serious as drugs? I’d had second thoughts and the fact that I thought they’d [a surgeon] done the wrong knee. He didn’t go into that because obviously that’s not part of his remit.”

Reese: “The surgeon will know better about how advanced it is and I’ve got a lot of faith in him. He can give me a better idea of where I should proceed after this. Because I’ve had it before, I have got a fairly good idea of what the process will be.”

Adjunctive treatments

Harry: “I couldn’t bend the knee very well; I was in real pain and he gave me a couple of needle sessions both hot and dry needles. He massaged the knee; he did a lot to try and bend the knee.”

Gordon: "It's a little bit of ultrasound, but basically manipulation. I'm always tight in the hamstring. I play lawn bowls, and if it was niggly, I drop in the physio and say listen, could you tape my knee for me, please, and they do it for me straight away."

Alice: "I did get a bit of massage and a trigger point treatment to help alleviate that. We also tried, I think it's called EMS machine, an electronic stimulation machine, to try and build the muscle at one point because my kneecap was so aggravated."

Theme 5: Happy and satisfied with physiotherapy

Trust and/or confidence Harry: "I thought he was excellent. He was one of the best physiotherapists I've ever seen in my life. His approach to everything, his care. Many of them can be in and out, I'm finished with you, I've only got so much time for you. None of that. He was extremely good, and I had complete trust in what he was doing. And when he did hurt me it wasn't because he wanted to hurt me, he said, oh I'm sorry and tell me if that's too hard."

Leanne: "I thought she was really good. I think she understood what my concerns were that I couldn't get upstairs. I couldn't drive the car because of the clutch and the knee pain. She looked at all those things and helped me with them."

Reese: "When he gave them to me, they all seemed quite logical because I know nothing, I wouldn't know what was good or bad for me. I trusted him because I had the condition before when my knee was bad. He also knew my background and what I'd been through, so that was good to have that kind of long-term relationship."

Personalized care Kate: "I had a good say in it because every time she suggested something she would ask. With appointment times, she would always check, 'Is this a good time for you?' Every time she suggested a treatment, she would ask me. She was always checking back with me."

Alice: "I think he has a very good understanding of my knee problem and I think he understands that better than my doctors, because he's worked side by side with me, he's supported me, it's more intimate. He's been keen to help resolve the problems, rather than doing, what I call a supermarket shelf, one size fits all program. He's really worked hard to try and work out what's best in my circumstance."

Millie: "My physiotherapist knows me well. I've been seeing him for some time, he seems to know where my problems lie. He spent the time to look at other areas which because of my osteoarthritis in my knee, I was having problems with. So at least he looked at all those areas, so I was happy with that. He came up with a few suggestions on how he would approach it, and then we went from there."

Theme 6: Belief that surgery is inevitable

Bianca: "I was told by my surgeon a few years ago that it would be likely I would need a knee replacement. They don't like to do it until it's absolutely necessary. He kept telling me I was too young. They like to wait until you're so old you might die under the knife or you don't get long enough to enjoy the freedom of your new knee."

Reese: "I am going to go to the orthopaedic specialist in February to have a look and see whether I should have a replacement. Part of me is thinking "Just go and have it done." I should just bite the bullet and do it while I'm young enough, you know?"

Sandy: "I'm on a waiting list to have a knee replacement. We know that the waiting list is fairly long, so I'll keep myself as healthy and fit as I possibly can, so that I'm able to get through this okay."

Peter: "Things like osteoarthritis and physiotherapy, there is only so much that physiotherapy can do. If it's bone on bone that doesn't replace the cartilage. All that physiotherapy can do is prescribe activities and exercises to help ameliorate the impact of the osteoarthritis because osteoarthritis doesn't go away. I've had arthroscopies on my knees, so there's no cartilage there. But I'm reluctant to have knee replacements."

*Good Life with Osteoarthritis: Denmark (GLA:D) is an education and exercise program developed in Denmark for people with hip/knee osteoarthritis. The program has been adapted and delivered by physiotherapists in Australia and comprises of an initial assessment, twelve supervised group exercise sessions, two group education sessions and a follow-up assessment.¹⁹

†The Osteoarthritis Chronic Care Program (OACCP) is a multidisciplinary model of care developed in New South Wales, Australia for people with hip/knee osteoarthritis, specifically those awaiting elective joint replacement surgery. The program is a public-health initiative in tertiary hospitals and offers conservative management, including programs for exercise and weight loss, self-management advice, psychological and pharmacological reviews and disease management education.¹⁸

‡Kieser is a strength training program using specific equipment and was originally developed in Switzerland. The program was adapted and delivered by physiotherapists in Australia in Kieser training centres.²⁰

§The Enhanced Primary Care Plan is a former term for a program now called a Chronic Disease Management Plan, which is a Medicare subsidised program enabling general practitioners to refer patients with a chronic medical condition to a maximum of five allied health services (including physiotherapists) per calendar year.²¹

Theme 1: Presented with a pre-existing OA diagnosis

Participants tended to have a diagnosis of knee OA already made by a doctor prior to their physiotherapy consultation and did not seek physiotherapists to take on a diagnostic role. They often brought knee imaging results with them to the physiotherapy consultation. Some expected physiotherapists to access imaging results from their general practitioners. Participants described a range of other health professionals they had consulted for their knee problems before consulting a physiotherapist, such as a general practitioner, rheumatologist, orthopaedic surgeon and/or sports medicine physician.

Participants generally perceived their pre-existing knowledge and understanding about OA to be adequate. They had typically acquired their knowledge from personal experience and/or from conversations with healthcare professionals prior to them seeking physiotherapy care. Often, knowledge about OA was constructed from imaging (e.g. x-ray) results. Participants often

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2
3 described their OA with phrases such as ‘wear and tear’, ‘bone on bone’, ‘degenerative’ and/or
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5 ‘cartilage wear’. Participants tended not to seek validation or confirmation of their knowledge
6
7 about OA from their physiotherapist, nor seek further education.
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10 11 *Theme 2: Varying models of physiotherapy care*

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13 Participants accessed physiotherapy through a variety of care models, including consultations at
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15 private physiotherapy practices, participation in programs specifically developed for OA
16
17 management delivered in the public (e.g. Osteoarthritis Chronic Care Program(18)) and private
18
19 (Good Life with Osteoarthritis Denmark (GLA:D(19)) healthcare settings, participation in more
20
21 generic strengthening-based programs (e.g. Kieser(20)), hydrotherapy and/or generic exercise
22
23 classes (e.g. Pilates/gym). Most were referred by their general practitioners or other medical
24
25 specialists but some “self-referred” to a local physiotherapist. Participants chose their
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27 physiotherapist by convenience (e.g. physiotherapist located in the same medical practice as their
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29 general practitioner or located close to home), by following a recommendation from their friend
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31 or doctor, or based on prior experience (e.g. previously consulted the physiotherapist for other
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33 musculoskeletal conditions and/or their knee problem).
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39 Participant attendance at physiotherapy services often relied on funding being available to
40
41 subsidise cost of care. Some participants described accessing physiotherapy in public hospital
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43 settings (e.g. Osteoarthritis Chronic Care Program(18)), some received Medicare rebates for
44
45 physiotherapy services in the private sector (e.g. via Chronic Disease Management Plans(21)),
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47 whilst others were subsidised through their private health insurance or other regulatory body (such
48
49 as worker compensation schemes). A few participants paid out-of-pocket to cover their
50
51 physiotherapy costs. Participants often ceased their physiotherapy visits because funding ran out.
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3 Participants received physiotherapy care via individual consultations and/or via group sessions.
4
5 Some participants attended one-on-one consultations several times before transitioning to a group
6
7 setting. Most described undergoing an individual assessment with the physiotherapist, including
8
9 those who ultimately participated in group classes. People referred to physiotherapy under the
10
11 Chronic Disease Management Plan typically attended individual physiotherapy sessions up to five
12
13 times.
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16 17 18 *Theme 3: Varied reasons for seeking physiotherapy care*

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20 Participants spoke about their knee symptoms as a major driver of seeking care, including ongoing
21
22 knee pain, swelling, clicking and muscle weakness. They expressed frustration with the pain they
23
24 experienced, particularly when it made them unable to move the knee or walk properly. Words
25
26 such as ‘click’, ‘crunch’ or ‘crack’ were commonly used to describe other symptoms. Participants
27
28 spoke about feeling weak around their knees, which caused their knee to ‘give way’ or ‘collapse’.
29
30 Participants also sought care because of difficulties with functional activities such as walking,
31
32 driving, getting in/out of the bed/chair/toilet/shower, negotiating steps and squatting. Some
33
34 participants avoided doing sports/recreational activities (e.g. cycling, surfing, running, swimming)
35
36 for fear of exacerbating pain. Many people expected physiotherapists to provide treatments to
37
38 relieve the pain and assist with building knee strength, as well as helping them to return to activities
39
40 they previously enjoyed or were now unable to do.
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46 47 *Theme 4: Physiotherapist management focused on function and exercise*

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49 The physiotherapist typically assessed functional ability, including walking, squatting, getting
50
51 in/out of a chair and negotiating stairs. Some participants were timed when performing functional
52
53 tests, and others were asked to repeat the tests as they progressed through their treatment sessions.
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3 Participants consistently described exercise as a key component of their physiotherapy
4 consultations. They received advice about different types of exercises for their OA, including
5 strengthening, cardiovascular, stretching, balance and functional movement programs. Some
6 participants were instructed to use exercise equipment such as elastic resistance bands and/or
7 weights to progress the intensity of the exercises. For those who were given home exercise
8 programs, exercise handouts or online instructions were provided. Some participants also attended
9 supervised group exercise classes such as gym or fitness-based program, Pilates, hydrotherapy,
10 balance and/or strengthening classes.
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22 Participants tended not to expect information about surgery, medications and knee injections from
23 their physiotherapist, instead considering these domains of care as a doctor's responsibility. Many
24 did not see the need for physiotherapists to cover these options further and some participants felt
25 that physiotherapists should refrain from providing any medication advice because they do not
26 have prescription rights.
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Some participants received adjunctive treatments from physiotherapists such as massage, dry
needling/acupuncture and manual knee mobilisation techniques to relieve muscle tightness and
joint stiffness. Transcutaneous electrical nerve stimulation and electronic muscle stimulator
machines were sometimes provided to relieve knee pain and stimulate muscles respectively. Other
common adjunctive treatments offered by physiotherapists included ultrasound, heat/cold pack,
taping and using a knee brace. These were typically delivered during individual physiotherapy
consultations.

Theme 5: Happy and satisfied with physiotherapy

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3 Generally, most participants were happy and satisfied with the physiotherapy care they received.
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5 Some described having trust in their physiotherapists, both in their clinical skills and professional
6
7 knowledge when managing knee OA. Most felt that their physiotherapist understood and
8
9 appreciated the problems they were experiencing, and some were impressed that the
10
11 physiotherapist was able to identify what was ‘going on’ with their knees. Participants were also
12
13 confident that their physiotherapists could help them by providing practical advice and/or
14
15 strategies to overcome their specific problems.
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20 Participants valued the highly personalised care they received and felt that physiotherapists
21
22 generally provided care that was tailored to their needs. They spoke about their physiotherapist as
23
24 being empathetic and understanding towards their condition/circumstances. Some felt that their
25
26 physiotherapist ‘knew them well’, which enabled the physiotherapist to provide the care and
27
28 support they desired/needed. Others highlighted the value of working collaboratively with their
29
30 physiotherapist and appreciated having a ‘two-way discussion’, where the participant was asked
31
32 for their input in devising a treatment plan for their OA. When care was not personalised,
33
34 participants expressed a sense of disappointment, describing the treatment received as a ‘sausage
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36 factory’, ‘supermarket shelf’, or being a ‘one size fits all program’
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41 *Theme 6: Belief that surgery is inevitable*

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44 Participants perceived that joint replacement surgery was inevitable for their knee problems. Many
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46 were informed of this by their doctor and some were already on hospital waiting lists for surgery.
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48 However, participants were also advised by their doctors/surgeons to delay surgery for as long as
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50 possible and some attended the physiotherapist in an effort to achieve this. Participants generally
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52 believed that physiotherapists were not able to ‘cure’ OA but could help in reducing its impact.
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3 Some described the role of physiotherapy as providing them with strategies to strengthen the knees
4 and alleviate their OA symptoms in order to delay surgery. Whilst some participants 'prepared'
5 their knee for surgery by seeing a physiotherapist, others were keen to have surgery as soon as
6 possible.
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13 **Discussion**

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16 This qualitative study explored experiences of people who had received physiotherapy care for
17 their knee OA in Australia. Participants were generally happy and satisfied with their
18 physiotherapy care and described having a strong sense of trust and/or confidence in their
19 physiotherapist. They felt that physiotherapists understood their problems and they appreciated
20 being offered the personalised care that most physiotherapists tended to provide. These findings
21 are consistent with previous research, which showed that patient satisfaction with physiotherapy
22 care for a range of musculoskeletal conditions was generally high in Australia and other countries
23 such as those in Northern Europe, North America, the United Kingdom and Ireland.(22)
24
25 Physiotherapists' interpersonal and communication skills are important attributes to high patient
26 satisfaction.(22) Our findings suggest that, generally, Australian physiotherapists work in a
27 patient-centred way to ensure that patients' treatment expectations, needs and preferences are
28 respected.
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44 Participants utilised various referral pathways and a range of different funding models to access
45 physiotherapy care through a diverse array of service delivery options. This suggests that there is
46 not a single 'one size fits all' model of physiotherapy care that will suit the needs and individual
47 circumstances of all Australians living with knee OA. Our findings highlight how important it is
48 for healthcare systems to offer different models of physiotherapy care, in both the public and
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3 private sectors, for example, spanning individual consultations through to group exercise classes.
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5 This helps to reduce inequity of access to physiotherapy care for people with knee OA, which may
6
7 arise from geographical location or socioeconomic status.(23) Indeed, a community-based survey
8
9 of 1000 people with arthritis in Australia found that over two thirds of respondents felt that they
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11 did not cope well with their condition because of the health care they experienced, and felt that
12
13 they had poor access to medical doctors, specialists and allied health professionals.(24) Allowing
14
15 patients the flexibility to choose which type of physiotherapy service best suits their needs,
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17 preferences and financial situation also aligns with a philosophy of patient-centred care,(25, 26)
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19 and permits the patient to have some control over their own health care.
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24 Our findings highlight how reliant people with knee OA are on government-funded health care
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26 and/or third-party payers (such as private health insurers) to fund their physiotherapy care.
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28 Participants predominantly accessed and received care from physiotherapists in private practice
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30 settings and typically ceased physiotherapy when funding ran out and they were required to pay
31
32 out-of-pocket for services. These findings are consistent with key Australian policy documents,
33
34 including the National Osteoarthritis Strategy,(27) that have called for expansion of funding to
35
36 support OA care delivery, including care delivered by physiotherapists.(28) Given the chronicity
37
38 of knee OA, regular reviews and follow-up are advocated to allow for monitoring of symptoms,
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40 permit timely changes to management, and to support effective self-management.(1) However,
41
42 similar to a previous study in Australia,(29) the costs associated with physiotherapy treatments
43
44 were identified by our participants as an important barrier to continuing to access physiotherapy
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46 care for OA. Our findings highlight the importance of funding mechanisms for physiotherapy
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48 services to relieve the financial burden that people experience when accessing necessary care for
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50 knee OA.
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3 Although pain was one of the important drivers of care-seeking in our participants, many also
4
5 desired help from the physiotherapist to maintain or improve muscle strength and physical
6
7 function. These findings highlight the need for physiotherapists to co-develop (with the patient) a
8
9 multi-faceted management plan that does not only focus on pain relief strategies but also
10
11 incorporates interventions that target strength and assist patients to engage in activities that are
12
13 meaningful to them. It is thus not surprising that participants in our study described the important
14
15 role that physiotherapists played in prescribing personalised exercise and addressing functional
16
17 deficits. A systematic review of patients' perceived health service needs for OA also showed that
18
19 one of the key reasons patients typically consulted physiotherapists was for exercise
20
21 advice/prescription.(5) Our patient perspectives about the important role that physiotherapists play
22
23 in prescribing exercise align with the perspectives of general practitioners,(30, 31) who often refer
24
25 patients with chronic knee pain to physiotherapists for exercise. General practitioners describe lack
26
27 of time as the most common barrier for them to initiate exercise with their patients, preferring
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29 instead to refer their patient to a physiotherapist.(30, 32) Similarly, physiotherapists themselves
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31 also perceived exercise and physical activity to be their main role in the management of people
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33 with knee OA(7) and are confident to prescribe exercises to improve knee strength and range of
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35 movement.(8)
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43 Interestingly, participants believed that they already had adequate knowledge and understanding
44
45 about their knee OA and did not seek further information from their physiotherapist. This was
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47 despite the fact that participants appeared to have different perceptions about knee OA (describing
48
49 it as 'wear and tear', 'bone on bone', 'degenerative' and/or 'cartilage wear') and their belief that
50
51 surgery is an inevitable consequence. These perceptions and beliefs about OA are similar to
52
53 findings from another study exploring reasons why patients resorted to surgical interventions for
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3 knee OA.(33) Once the participants in that study had been "diagnosed" with "bone-on-bone"
4 changes, many disregarded exercise-based interventions (which they believed would damage their
5 joint) in favour of alternative and experimental treatments (which they believed would help
6 regenerate lost cartilage). In order to maximise success with exercise interventions, these findings
7 suggest that physiotherapists could consider reframing their conversations to actively invite the
8 patient to share their pre-existing knowledge about OA so that any perceptions may be subtly
9 corrected, and evidence-based educational resources shared.
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20 Participants also did not expect physiotherapists to provide them with information regarding
21 medications, knee injections and surgery even though these topics are advocated as important
22 responsibilities of all health professionals when managing OA.(1, 34) Instead, participants
23 generally approached their medical doctors for advice in these domains of care. This is likely
24 because, in Australia, physiotherapists can only provide advice about over-the-counter
25 medications and do not have prescribing rights. In terms of surgery, patients are only entitled to
26 rebate under the Government-funded Medicare scheme for any surgical procedure if they are
27 directly referred by their general practitioners.(35)
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39 Some participants received adjunctive treatments from their physiotherapist, such as massage,
40 acupuncture and electrotherapy interventions despite limited evidence to support their use.(1, 3,
41 36) We do not know if participants specifically requested these treatments and/or if their
42 physiotherapist helped the participant to make an informed treatment decision by discussing their
43 limited treatment efficacy for knee OA. Patients with other musculoskeletal conditions, such as
44 low back pain, often present to physiotherapists with pre-conceived ideas about physiotherapy
45 treatment,(37) and may desire 'hands-on' treatment or any intervention that has previously eased
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3 their back symptoms. Physiotherapists may feel obliged to provide treatments with limited efficacy
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5 in order to meet the patient's treatment expectation.
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8 A strength of our study was its qualitative design, which allowed us to explore the experiences of
9
10 people receiving physiotherapy care for knee OA in Australia. In order to explore diversity in
11
12 experiences, we interviewed a range of participants, including males and females of differing age,
13
14 occupational status and geographical location across Australia. Our study also has limitations.
15
16 Participants responded to advertisements (social media) and/or email invitations (research
17
18 volunteer database) to participate and thus our sample may be biased towards those who had
19
20 favourable experiences with physiotherapy and/or were successful at accessing physiotherapy. Our
21
22 sample was constrained to participants who could speak English and given that 21% of Australians
23
24 speak a language other than English at home,(38) we do not know if our findings reflect the
25
26 experiences of people from culturally and linguistically diverse backgrounds. Furthermore,
27
28 physiotherapists are a primary contact health profession in Australia so patient experiences with
29
30 physiotherapy care for knee OA may be different in other countries where people can only access
31
32 a physiotherapist on referral. Future research is particularly warranted in low to middle income
33
34 countries, given that social factors such as education level and income influence patient access to
35
36 allied health services such as physiotherapy.(39) Our findings may also not be applicable in
37
38 countries where cultural beliefs differ considerably from the Australian context. The perception of
39
40 pain, health beliefs and concept of disability and its management often vary from one culture to
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42 another(40) and thus may influence patients' experiences managing their conditions.
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50 In conclusion, our findings provide evidence from the patient's perspective about the important
51
52 role physiotherapists play in the care of Australians with knee OA, reinforcing the need for
53
54 equitable access to physiotherapy services that are supported by a range of funding models.
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3 Findings highlight the importance of different pathways for accessing care to meet the needs of
4 individuals and ensure that all people with knee OA are adequately supported in managing their
5 condition.
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25 **Contributors**

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28 PLT, KLB, KSD and RSH contributed to the study conception and design. PLT completed data
29 collection. PLT, LBJ and RSH contributed to the data analysis and interpretation of data. PLT
30 wrote the first draft of the manuscript. All authors revised the paper and provided scientific input.
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33 All authors approved the final version of the manuscript.
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6
7 interpretation of the results or reporting.
8
9

10 **Conflict of interest**

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13 The authors declare that they have no competing interests.
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Patient experiences with physiotherapy for knee osteoarthritis in Australia – a qualitative study

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3 **1 Title: Patient experiences with physiotherapy for knee osteoarthritis in Australia – a**
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5 **2 qualitative study**
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50 **Word count:** 4347
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53 **Key words:** qualitative research, physiotherapy, knee osteoarthritis, exercise, patient experience.
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23 **Abstract**

24 *Objective:* Physiotherapists commonly provide non-surgical care for people with knee
25 osteoarthritis (OA). It is unknown if patients are receiving high-quality physiotherapy care for their
26 knee OA. This study aimed to explore the experiences of people who had recently received
27 physiotherapy care for their knee OA in Australia and how these experiences aligned with the
28 national Clinical Care Standard for knee OA.

29 *Design:* Qualitative study using semi-structured individual telephone interviews and thematic
30 analysis, where themes/subthemes were inductively derived. Questions were informed by seven
31 quality statements of the OA of the Knee Clinical Care Standard. Interview data were also
32 deductively analysed according to the Standard.

33 *Setting:* Participants were recruited from around Australia via Facebook and our research volunteer
34 database.

35 *Participants:* Interviews were conducted with twenty-four people with recent experience receiving
36 physiotherapy care for their knee OA. They were required to be aged 45 years or above, had
37 activity-related knee pain and any knee-related morning stiffness lasted no longer than 30 minutes.
38 Participants were excluded if they had self-reported inflammatory arthritis and/or had undergone
39 knee replacement surgery for the affected knee.

40 *Results:* Six themes emerged: 1) Presented with a pre-existing osteoarthritis diagnosis (prior OA
41 care from other health professionals; perception of adequate OA knowledge); 2) Wide variation in
42 access and provision of physiotherapy care (referral pathways; funding models; individual vs
43 group sessions); 3) Seeking physiotherapy care for pain and functional limitations (knee
44 symptoms; functional problems); 4) Physiotherapy management focussed on function and exercise

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3 45 (assessment of function; various types of exercises prescribed; surgery, medications, and injections
4
5 46 are for doctors; adjunctive treatments); 5) Professional and personalized care (trust and/or
6
7 47 confidence; personalized care); and 6) Physiotherapy to postpone or prepare for surgery.
8
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10 48 *Conclusion:* Patients' experiences with receiving physiotherapy care for their knee OA were partly
11
12 49 aligned with the Standard, particularly regarding comprehensive assessment, self-management,
13
14 50 and exercise.
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21 52 **Strengths and limitations of this study**

- 24 53 • A strength of this study was using a qualitative design to explore how the experiences of people
25
26 54 receiving physiotherapy care for knee OA in Australia aligned with the national Clinical Care
27
28 55 Standard.
- 31 56 • A range of participants was interviewed, including males and females of differing age,
32
33 57 occupational status, and geographical location across Australia.
- 36 58 • Participants responded to advertisements and/or email invitations to participate and thus our
37
38 59 sample may be biased towards those who had favourable experiences with physiotherapy
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40 60 and/or were successful at accessing physiotherapy.
- 43 61 • Our sample was constrained to participants who could speak English so may not represent the
44
45 62 experiences of people from culturally and linguistically diverse backgrounds.
- 47 63 • Physiotherapists are a primary contact health profession in Australia so patient experiences
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49 64 with physiotherapy care for knee OA may be different in other countries where people can
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51 65 only access a physiotherapist on referral.
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3 67 Knee osteoarthritis (OA) is highly prevalent and a leading cause of pain and disability worldwide.
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5 68 (1) Clinical guidelines advocate non-surgical interventions such as exercise, weight loss (for
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8 69 people who are overweight or obese) and education regarding self-management as first line
9
10 70 treatments for knee OA,(1-3) Physiotherapists are important providers of non-surgical care for
11
12 71 people with knee OA and receive more OA referrals from general practitioners than other allied
13
14 72 health providers.(4) In addition, patients generally perceive physiotherapists to be important to
15
16 73 assist them in managing their OA and prescribing exercises.(5, 6)
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20 74 To date, there are indications that physiotherapy care provided to people with knee OA may not
21
22 75 necessarily align with evidence-based care standards. We recently conducted a qualitative study
23
24 76 to explore the experiences of Australian physiotherapists delivering care for people with knee OA
25
26 77 and how their experiences aligned with the national Clinical Care Standard.(7) The Clinical Care
27
28 78 Standard for knee OA defines seven key aspects of care that people with knee OA should expect
29
30 79 to receive in Australia.(8) We found physiotherapists tended to rely on biomedically-oriented
31
32 80 assessment and would often provide treatment (such as manual therapy) and self-management
33
34 81 strategies that aimed to address the ‘mechanical’ aspects of knee OA. The primary focus for
35
36 82 physiotherapists was to provide goal-orientated personalised exercise. Surgery was perceived as a
37
38 83 last resort, and patient comorbidity, adherence, and desire for a ‘quick fix’ were the main clinical
39
40 84 challenges experienced. Physiotherapists also described a mismatch between what they knew and
41
42 85 what they did when it came to imaging, weight management and manual therapy. Weight loss,
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44 86 medication and surgical advice were perceived to be outside of their scope of practice.
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46 87 Nevertheless, physiotherapists’ reported experiences were mostly consistent with the quality care
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48 88 standard.(7) Findings from this study provide useful information about physiotherapy management
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3 89 of people with knee OA but it can be argued that a patient's perspective of their physiotherapy
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5 90 care experiences may not necessarily be similar to that of the therapist.
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8 91 Several qualitative studies have explored patient experiences of receiving care for their knee OA
9
10 92 from either a multidisciplinary team which included physiotherapists (9-14) or solely from
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12 93 physiotherapists.(15-19) However, none of these studies have specifically explored patient
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14 94 experiences receiving physiotherapy assessment, diagnosis, treatment options and follow-up
15
16 95 appointments for their knee OA. This study is complementary to our previous similar qualitative
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18 96 study with physiotherapists as participants.(7) In the present study, we aim to explore the
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20 97 experiences of Australians who had recently received physiotherapy care for their knee OA and
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22 98 how these experiences aligned with the national Clinical Care Standard for knee OA. Such
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24 99 information will help enhance our understanding of patient experiences with physiotherapy care
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26 100 for their condition and may help inform strategies to improve future care and service delivery.
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31 32 101 **Method**

33 34 35 102 *Design*

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37
38 103 This qualitative study used semi-structured interviews and was based on a constructivist paradigm,
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40 104 where knowledge is built through active experience and interpretation.(20) Qualitative methods
41
42 105 allow for in-depth examination of the attitudes, experiences, and behaviours of individuals in their
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44 106 natural context and can contribute to a broader understanding of medical research.(21-23) The
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46 107 Standards for Reporting Qualitative Research checklist was used to ensure explicit and
47
48 108 comprehensive reporting of this study.(24)
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51 52 109 *Patient and public involvement*

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3 110 Patients or the public were not actively involved in the design, conduct, reporting or dissemination
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5 111 plans of our research.
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8 112 *Participants*
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10
11 113 A convenience sample of adults who had sought physiotherapy care to manage their knee OA were
12
13 114 recruited from around Australia via Facebook and our research volunteer database. Inclusion
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15 115 criteria for participants were: i) met the National Institute for Health and Care Excellence OA
16
17 116 clinical criteria (1) (aged 45 years or above, had activity-related knee pain and any knee-related
18
19 117 morning stiffness lasted no longer than 30 minutes); and ii) consulted a physiotherapist about their
20
21 118 knee OA in the prior 6 months. Participants were excluded if they had self-reported inflammatory
22
23 119 arthritis and/or had undergone knee replacement surgery for the affected knee. The final sample
24
25 120 size was determined by the principles of data saturation, this being when no new themes emerged
26
27 121 from the data.(25) Participants provided written informed consent and ethical approval was granted
28
29 122 by the School of Health Sciences Human Ethics Advisory Group, University of Melbourne.
30
31 123 Interviews were conducted between December 2019 and January 2020.
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37 124 *Interviews*
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40 125 Semi-structured interview guides (Table 1) were developed, informed by the quality statements of
41
42 126 the Australian Government's OA of the Knee Clinical Care Standard.(8) It defines seven domains
43
44 127 of care that people with knee OA should expect to receive, regardless of where they are treated in
45
46 128 Australia, spanning comprehensive assessment, diagnosis, education and self-management, weight
47
48 129 loss and exercise, medications, regular review and surgical options for people with knee OA.
49
50 130 Participants were reimbursed for their time with a \$50 gift card.
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55 131 **Table 1: Semi-structured interview guide.**
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Topic	Question
Introduction	1) Can you tell me about your experiences attending physiotherapy for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>What prompted you to seek physiotherapy care?</i>
	2) Can you tell me, where did you see the physiotherapist(s)? <ul style="list-style-type: none"> ○ <i>How did you end up seeing a physiotherapist?</i>
Comprehensive assessment	3) Can you tell me how the physiotherapist assessed you and your knee problem? <ul style="list-style-type: none"> ○ <i>What sort of questions did the physiotherapist ask you?</i> ○ <i>What sort of physical examination did the physiotherapist do?</i> ○ <i>What other health conditions or social factors that might affect how you manage your knee pain (for example, changing work) did the physiotherapist assess?</i> ○ <i>What sort of questionnaire, survey or form did the physiotherapist ask you to complete?</i>
	4) What was the main problem you were seeing the physiotherapist for? <ul style="list-style-type: none"> ○ <i>How well did the physiotherapist understand the main problems you were experiencing for your knee?</i>
	5) How did the physiotherapist decide that you have knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>What sort of tests or scans did the physiotherapist order for your knee osteoarthritis?</i> ○ <i>How did the physiotherapist explain/help you to understand your diagnosis?</i>
	6) What sort of treatments did the physiotherapist give you for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist provided you with any hands-on treatment or used any machine/device on your knee?</i> ○ <i>Can you tell me if the physiotherapist advised you on the use of knee brace, walking aid or taping for your knee problem?</i>
7) Can you tell me what you remember about any information/advice you received from the physiotherapist for your knee osteoarthritis?	
Weight loss & exercise	8) What exercise did the physiotherapist suggest you try? <ul style="list-style-type: none"> ○ <i>How did the physiotherapist consider your needs and preferences when deciding on the best exercise program for you?</i>
	9) Could you tell me if weight is an issue for you? If so, what weight loss treatment did the physiotherapist suggest you try?
	10) Can you tell me if the physiotherapist discussed with you the importance of maintaining healthy body weight for your knee osteoarthritis?
Medications	11) Can you tell me if you are taking any medications to manage your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if you asked the physiotherapist ways to manage your medications?</i> ○ <i>Is there a reason why you didn't ask the physiotherapist about medications for your knee?</i>
	12) What information/advice did the physiotherapist provide about medicines/drugs for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist spoke about any injection you could get for your knee?</i>
Patient review	13) Can you tell me how often you saw the physiotherapist for your knee problems? <ul style="list-style-type: none"> ○ <i>How many times did you see the physiotherapist for you knee?</i> ○ <i>How frequently do you see the physiotherapist now?</i> ○ <i>What did the physiotherapist advise you to do if your problems get worse?</i>
	14) Which other health professional did the physiotherapist recommend you see for your knee problem? <ul style="list-style-type: none"> ○ <i>How did you go with the recommendation?</i>
	15) Can you tell me if you have considered any sort of surgery for your knee osteoarthritis? <ul style="list-style-type: none"> ○ <i>Can you tell me if the physiotherapist asked you about your thoughts of having any knee surgery?</i>
	16) What information/advice did the physiotherapist provide about surgical treatments for your knee osteoarthritis?

Concluding remarks	17) Is there any other aspect about your physiotherapy care you would like to discuss?
	18) Do you have anything else to add?

132

133 Individual interviews were conducted via telephone by PLT, a female graduate research student
134 and physiotherapist trained in qualitative methodologies. Telephone interviews were conducted to
135 facilitate participation of people with knee OA from Australia (irrespective of geographical
136 location) and to promote a perception of anonymity in interviewees.(26) Interview questions were
137 refined following the first three phone interviews to improve clarity for participants based on
138 experience from the initial interviews. The refinement also helped to enhance/expand the prompts
139 to ensure rich information were collected from the participants. Interviews were audio recorded
140 and transcribed verbatim by an external provider.

141 *Data analysis*

142 An inductive thematic approach was used initially.(27) In order to minimise over-representation,
143 two researchers conducted the data analysis simultaneously. Following Morse et al's approach to
144 inductive thematic analysis (which advocates for four steps: 1) read and re-read interview
145 transcripts; 2) step back and reflect on interviews as a whole; 3) identify ideas of similar nature 4)
146 group ideas into themes),(27) firstly, the student researcher (PLT) and another post-doctoral
147 researcher (BJL) with expertise in qualitative methodologies (and who is not a physiotherapist)
148 individually read each transcript. Next, they re-read and inductively coded each transcript to
149 identify topics and initial patterns of emerging ideas. They then compared codes and grouped
150 similar topics/ideas into categories before organising them into broader themes and sub-themes.
151 The interview data were also deductively analysed according to the national Clinical Care

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3 152 Standard for knee OA. These were further reviewed and discussed with the broader research team
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5 153 (RSH, KLB, TE). The senior researcher (RSH) read all transcripts prior to discussion to ensure
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7 154 data credibility and confirmability. Analysis was performed using standard word processing
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9 155 software.(17)
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13 156 **Results**

16 157 Seventy-six participants responded to the interview invitation but only 31 fulfilled the eligibility
17
18 158 criteria for this study. Of the 31 eligible participants, 24 completed the interview while the
19
20 159 remaining either declined participation or were not contactable. Table 2 describes the 24
21
22 160 participants interviewed. Three-quarters were female, and the mean (standard deviation) age was
23
24 161 64 (10) years (range 49 to 81). Participants resided in all of Australia's six states and two territories.
25
26 162 Most lived in major cities (79%), with some from outer regional (13%) or inner regional areas
27
28 163 (8%). Most (67%) people reported less than five sessions of physiotherapy for their knee OA in
29
30 164 the prior 6 months, some (25%) between five to nine and two (8%) reported ten or more sessions.
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35 165 **Table 2: Characteristics of the patients (n=24).**

	Mean (SD) or n (%)
Female	18 (75%)
Age (years)	63.5 (9.8)
State	
-Australian Capital Territory	2 (8%)
-New South Wales	5 (21%)
-Northern Territory	1 (4%)
-Queensland	2 (8%)
-South Australia	2 (8%)
-Tasmania	1 (4%)
-Victoria	8 (33%)

1		
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3		
4	-Western Australia	3 (13%)
5	Geographical location*	
6		
7	-Major cities	19 (79%)
8	-Inner regional	2 (8%)
9		
10	-Outer regional	3 (13%)
11		
12	Education level	
13		
14	-Three years or more of high school	5 (21%)
15	-Some tertiary training	5 (21%)
16		
17	-Graduated from university or polytechnic	7 (29%)
18	-Any post-graduate study	7 (29%)
19		
20	Work status	
21		
22	-Work full-time	3 (13%)
23	-Work part-time	7 (29%)
24		
25	-Unable to work due to health reasons	3 (13%)
26	-Retired (not due to health reasons)	11 (46%)
27		
28	Knee pain severity[†]	5.7 (1.9)
29		
30	Pain (WOMAC)[‡]	6.8 (3.0)
31		
32	Physical function (WOMAC)[‡]	22.1 (10.5)
33		
34	Number of physiotherapy sessions[§]	
35		
36	-4 or less	16 (67%)
37	-5 to 9	6 (25%)
38	-10 or more	2 (8%)
39		
40	Number of physiotherapist(s) seen	1.1 (0.3)

41 166 SD: standard deviation

42 167 n: number of participants

43 168 *Classification based on residential postcode, in accordance with Australian Standard
44 169 Geographical Classification.

45 170 † Measured by 11-point numeric rating scale (0 = no pain, 10 = worst pain possible), where patients
46 171 rated the average amount of their knee pain over the past week.

47 172 ‡ Measured by Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC),
48 173 where pain scores range from 0 to 20 and physical function scores range from 0 to 68 (higher
49 174 scores indicate worse pain/poorer function).

50 175 § Number of physiotherapy sessions attended by patient for their knee osteoarthritis over the last
51 176 six months

52 177 || Number of physiotherapist(s) consulted by patient for their knee osteoarthritis over the last six
53 178 months

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3 179 Six themes emerged following the inductive thematic analysis.(27) An audit trail of evidence
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5 180 showing examples of each stage of the data analysis is presented in Supplementary file 1. The six
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8 181 themes identified are outlined in Table 3 and described below.
9

10
11 182 **Table 3: Themes, subthemes and exemplary quotes from the patient interviews.**

Theme 1: Presented with a pre-existing osteoarthritis diagnosis	
<i>Prior OA care from other health professionals</i>	<p>Male, 76 years: "I got my MRI scan and I took it back to the doctor and it showed that I had osteoarthritis, that it was very inflamed, that my cruciate ligament resembled a celery stick and he got me to go to see the physio."</p> <p>Male, 75 years: "My knees got really bad about last July and I went to see a surgeon with the possible view of having replacements done. The diagnosis for both knees were bone on bone. He didn't feel that I was severe enough to warrant surgery at that time, so on further discussion, he suggested that I go to physiotherapy to strengthen my legs. So, I went to a local physiotherapist."</p> <p>Female, 76 years: "I've had the experience with the osteoarthritis for about eight or nine years and first of all, I went to a knee specialist and then I went to a sports medicine specialist and orthopaedic surgeon. I did that for about eight or nine years and recently, I've been to a physiotherapist for the Good Life with osteoarthritis: Denmark (GLA:D) program*."</p>
<i>Perception of adequate OA knowledge</i>	<p>Female, 49 years: "I think I have a fairly good understanding of what osteoarthritis is. I understand that I have damage to the articular cartilage of my kneecap and medial femoral condyle. I have very little cartilage at all and that's rubbing. To be honest, I didn't need him [the physiotherapist] to explain all of that."</p> <p>Male, 70 years: "The physiotherapist saw the x-rays and they have training in interpreting x-rays like that for degenerative bone disease such as osteoarthritis, cartilage wear and things like that. I was well aware that I had osteoarthritis, so I don't think he did anything to explain the osteoarthritis because I was fairly well aware of what it was on about."</p> <p>Male, 60 years: "It's just basically wear and tear, and it's really bone on bone. The surgeon explained it to me, too. He sat me down with him at his computer looking at the MRI. It's little fragments of bone and stuff that are rubbing against each other and disintegration of your bone in your patella plus around your knee. Because there's no blood flow in that area, it doesn't heal."</p>
Theme 2: Wide variation in access and provision of physiotherapy care	
<i>Referral pathways</i>	<p>Male, 56 years: "Initially I went to the orthopaedic surgeon and it was deemed that surgery is inappropriate at the moment because of age and probably not severe enough to warrant a replacement. I [was referred by the surgeon to] the osteoarthritis [chronic care program]. The [osteoarthritis] chronic care program[†] was really an intermediary or, hopefully, a step to prevent requiring a knee replacement as such."</p>

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Female, 49 years: “I mentioned to my doctor I’m getting these sore knees, she said, you should try Kieser⁴. I knew it was up the road, my friend went there, and my doctor said it could be a good idea.”

Female, 55 years: “I just chose them [the physiotherapy centre] because I knew they did Pilates and exercise rehab, so that’s why I went there. And they were close to home.”

Male, 72 years: “My doctor recommendation. I got on this Enhanced Primary Care Plan⁵ where they recommend a physiotherapist.”

Funding models

Female, 60 years: “I had an accident at work a few years ago. I suffered quite a bit of pain and I was referred to a specialist, and he did an arthroscopy. Then I was doing follow-up physiotherapy after the arthroscopy. The surgeon did another arthroscopy and I followed up with more physiotherapy - and started doing hydrotherapy under a physiotherapist. I was doing those sessions on a regular basis. WorkCover then ceased to cover me, and so I was doing them myself out-of-pocket.”

Female, 69 years: “I went to my general practitioner and got the five treatments that you can get from the government for chronic illness. [With] the care plan you only get five treatments, but then I’ve got private health insurance, so I saw him under that as well.”

Female, 69 years: “I had ancillary benefits at that stage and I only got about five treatments covered by that ancillary benefits with Medibank Private. I couldn’t afford the ancillary benefits anymore so, no, I won’t go to a physio now.”

Individual vs group sessions

Female, 69 years: “The most recent physio visit was with a new physio because I was having a bicycle fit, and as part of the bike fit the physio did a full-on assessment so he talked more about osteoarthritis as well. I’ve only seen him once.”

Female, 55 years: “I didn’t see an individual physio for individual sessions in the last six months. I was always in group sessions. It’s a general fitness class but it’s mainly for menopausal age group. So, everyone has their own set of problems. It’s not tailored just for one problem; it’s tailored for everyone.”

Male, 75 years: “I went to a local physiotherapist and they did sort of two sessions of assessment. And then I started going to regular weekly classes.”

Female, 79 years: “Recently this year, I’ve been to a physiotherapist for the GLA:D* program. As part of the GLA:D* program, we had to do an education program and so she [the physiotherapist] showed us a diagram of the knee and explained how different things get worn out and rough. There were six different exercises in the GLA:D* program.”

Theme 3: Seeking physiotherapy care for pain and functional limitations

Knee symptoms

Female, 49 years: “My knees were becoming sorer and clicking as I walked, particularly up sets of stairs. And I have a lot of stairs at work. So, I thought I need to go and talk to a physio about it.”

Female, 51 years: “I had an ongoing knee problem and the pain was just killing me. I would be in tears with the pain. I went to the doctor; they were giving me anti-inflammatory tablets, they were not working. So, I said is there anything I can do, will physio help, and the doctor sent a referral to the physio.”

Female, 55 years: “Well, it was for knee pain that I wanted to go and build-up the strength in my legs to try and avoid surgery. I’ve lost capacity to squat and things like that; I’ve lost a lot of strength in my right leg and my legs have become quite bowed.”

Functional problems

Female, 69 years: “I think she understood what my concerns were that I couldn’t get upstairs. I couldn’t drive the car because of the clutch and the knee pain. She looked at all those things and helped me with them.”

Female, 81 years: “I told her [the physiotherapist] that my foot turns in. I also told her that my knee crunches. I can manage the pain but going up and down stairs is one of the problems that I’ve got.”

Male, 72 years: “Well I told him [the physiotherapist], I said, look, I just want to get back surfing properly and snowboarding and skiing. I said I realise I’m 72 years old and it’s not going to be easy and they said, oh no, no problem we can do it.”

Theme 4: Physiotherapy management focussed on function and exercise

Assessment of function

Male, 56 years: “Timing or just observing, getting in and out of a chair. Walking a set distance, I think it might have been like 100 metres and they time that. And then, there was going up and down stairs and they had some sort of a measurement with that. Then, over time would repeat that and see if there was any improvement.”

Female, 49 years: “He watched me from a seated position to standing. He looked at my movements. We went out the back and I did a lot of walking up and down, and they had a staircase of about three or four steps, and he watched where the pain happened there. He had me practicing, in particular, the way I walk up and down stairs to make sure that through my feet, I was balancing the weight and not throwing to one side.”

Male, 75 years: “They were measuring how far I could bend my legs laying down and standing up. Squats. Doing steps. They found that I was bending knees. I wasn’t walking correctly, but I was doing that to relieve the pain. They got me stepping up correctly with a straight leg. I think she made a record of all of her findings and then set these exercises to hopefully relieve some of the pain and strengthen my leg muscles.”

Various types of exercises prescribed

Female, 49 years: “He gave me an exercise program, just some gentle swinging of the knee initially, and then I built it up to other types of exercise. He had me practicing the way I walk up and down stairs, then we looked at me doing some kicking, gentle kicking with the board and gentle deep water running as opposed to doing the structured classes.”

Male, 75 years: “Other than exercise machines that they had in-house, there was elastic stretching band and she told me to do elliptical trainer at home and a cycle machine. I’ve got a list here. Its straight leg raise, bridging, clams, ball squeezes, sit to stand, lunges, calf raises ballet style, step-ups, go on the bike, and balance exercise.”

Female, 55 years: “I was doing Pilates, then I was doing Fit-Right classes. We did lots of clams with weights and off-weights. I did a lot of [reformer] where I sat on a spring-loaded box.”

Surgery, medications, and injections are for doctors

Male, 56 years: "I think it's the rheumatologist or my general practitioner who would be issuing the drugs so I didn't think that would be physio. I don't think meds ever really was their [the physiotherapists'] jurisdiction."

Male, 72 years: "The physio doesn't want to go into the drug side of it because of the risks. Why would he change it as regards something as serious as drugs? I'd had second thoughts and the fact that I thought they'd [a surgeon] done the wrong knee. He didn't go into that because obviously that's not part of his remit."

Female, 69 years: "The surgeon will know better about how advanced it is and I've got a lot of faith in him. He can give me a better idea of where I should proceed after this. Because I've had it before, I have got a fairly good idea of what the process will be."

Adjunctive treatments

Male, 76 years: "I couldn't bend the knee very well; I was in real pain and he gave me a couple of needle sessions both hot and dry needles. He massaged the knee; he did a lot to try and bend the knee."

Male, 60 years: "It's a little bit of ultrasound, but basically manipulation. I'm always tight in the hamstring. I play lawn bowls, and if it was niggly, I drop in the physio and say listen, could you tape my knee for me, please, and they do it for me straight away."

Female, 69 years: "I did get a bit of massage and a trigger point treatment to help alleviate that. We also tried, I think it's called EMS machine, an electronic stimulation machine, to try and build the muscle at one point because my kneecap was so aggravated."

Theme 5: Professional and personalized care

Trust and/or confidence

Male, 76 years: "I thought he was excellent. He was one of the best physiotherapists I've ever seen in my life. His approach to everything, his care. Many of them can be in and out, I'm finished with you, I've only got so much time for you. None of that. He was extremely good, and I had complete trust in what he was doing. And when he did hurt me it wasn't because he wanted to hurt me, he said, oh I'm sorry and tell me if that's too hard."

Female, 69 years: "I thought she was really good. I think she understood what my concerns were that I couldn't get upstairs. I couldn't drive the car because of the clutch and the knee pain. She looked at all those things and helped me with them."

Female, 69 years: "When he gave them to me, they all seemed quite logical because I know nothing, I wouldn't know what was good or bad for me. I trusted him because I had the condition before when my knee was bad. He also knew my background and what I'd been through, so that was good to have that kind of long-term relationship."

Personalized care

Female, 51 years: "I had a good say in it because every time she suggested something she would ask. With appointment times, she would always check, 'Is this a good time for you?' Every time she suggested a treatment, she would ask me. She was always checking back with me."

Female, 49 years: "I think he has a very good understanding of my knee problem and I think he understands that better than my doctors, because he's worked side by side with me, he's supported me, it's more intimate. He's been keen to help resolve the problems,

rather than doing, what I call a supermarket shelf, one size fits all program. He's really worked hard to try and work out what's best in my circumstance."

Female, 49 years: "I also went to a gym called Kieser which is – I call it the sausage factory of physiotherapy. The person who started the program for me was a physiotherapist and guided that program, but I guess I didn't feel that really was addressing my issues. It was building my core strength, but it wasn't really helping my knees."

Female, 57 years: "My physiotherapist knows me well. I've been seeing him for some time, he seems to know where my problems lie. He spent the time to look at other areas which because of my osteoarthritis in my knee, I was having problems with. So at least he looked at all those areas, so I was happy with that. He came up with a few suggestions on how he would approach it, and then we went from there."

Theme 6: Physiotherapy to postpone or prepare for surgery

Female, 60 years: "I was told by my surgeon a few years ago that it would be likely I would need a knee replacement. They don't like to do it until it's absolutely necessary. He kept telling me I was too young. They like to wait until you're so old you might die under the knife or you don't get long enough to enjoy the freedom of your new knee."

Female, 69 years: "We were talking about the advantages of doing it [surgery] sooner than later, but then he's [the physiotherapist] saying if I do it a bit later then we can strengthen the muscles in my knee and around my knee, that will make maybe recovery quicker."

Female, 60 years: "I'm on a waiting list to have a knee replacement. We know that the waiting list is fairly long, so I'll keep myself as healthy and fit as I possibly can, so that I'm able to get through this okay."

Male, 70 years: "Things like osteoarthritis and physiotherapy, there is only so much that physiotherapy can do. If it's bone on bone that doesn't replace the cartilage. All that physiotherapy can do is prescribe activities and exercises to help ameliorate the impact of the osteoarthritis because osteoarthritis doesn't go away. I've had arthroscopies on my knees, so there's no cartilage there. But I'm reluctant to have knee replacements."

183 *Good Life with Osteoarthritis: Denmark (GLA:D) is an education and exercise program developed in Denmark for
184 people with hip/knee osteoarthritis. The program has been adapted and delivered by physiotherapists in Australia and
185 comprises of an initial assessment, twelve supervised group exercise sessions, two group education sessions and a
186 follow-up assessment.¹⁹

187 †The Osteoarthritis Chronic Care Program (OACCP) is a multidisciplinary model of care developed in New South
188 Wales, Australia for people with hip/knee osteoarthritis, specifically those awaiting elective joint replacement surgery.
189 The program is a public-health initiative in tertiary hospitals and offers conservative management, including programs
190 for exercise and weight loss, self-management advice, psychological and pharmacological reviews and disease
191 management education.¹⁸

192 ‡Kieser is a strength training program using specific equipment and was originally developed in Switzerland. The
193 program was adapted and delivered by physiotherapists in Australia in Kieser training centres.²⁰

194 §The Enhanced Primary Care Plan is a former term for a program now called a Chronic Disease Management Plan,
195 which is a Medicare subsidised program enabling general practitioners to refer patients with a chronic medical
196 condition to a maximum of five allied health services (including physiotherapists) per calendar year.²¹

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3 198 *Theme 1: Presented with a pre-existing OA diagnosis*
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6 199 Participants tended to have a diagnosis of knee OA already made by a doctor prior to their
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8 200 physiotherapy consultation and did not seek physiotherapists to take on a diagnostic role. They
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10 201 often brought knee imaging results with them to the physiotherapy consultation. Some expected
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12 202 physiotherapists to access imaging results from their general practitioners. Participants described
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14 203 a range of other health professionals they had consulted for their knee problems before consulting
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16 204 a physiotherapist, such as a general practitioner, rheumatologist, orthopaedic surgeon and/or sports
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18 205 medicine physician.
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23 206 Participants generally perceived their pre-existing knowledge and understanding about OA to be
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25 207 adequate. They had typically acquired their knowledge from personal experience and/or from
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27 208 conversations with healthcare professionals prior to them seeking physiotherapy care. Often,
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29 209 knowledge about OA was constructed from imaging (e.g. x-ray) results. Participants often
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31 210 described their OA with phrases such as ‘wear and tear’, ‘bone on bone’, ‘degenerative’ and/or
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33 211 ‘cartilage wear’.
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37 212 *Theme 2: Wide variation in access and provision of physiotherapy care*
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40 213 Participants accessed physiotherapy through a variety of care models, including consultations at
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42 214 private physiotherapy practices, participation in programs specifically developed for OA
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44 215 management delivered in the public (e.g. Osteoarthritis Chronic Care Program(28)) and private
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46 216 (Good Life with Osteoarthritis Denmark (GLA:D(29)) healthcare settings, participation in more
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48 217 generic strengthening-based programs (e.g. Kieser(30)), hydrotherapy and/or generic exercise
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50 218 classes (e.g. Pilates/gym). Most were referred by their general practitioners or other medical
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52 219 specialists but some “self-referred” to a local physiotherapist. Participants chose their
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3 220 physiotherapist by convenience (e.g. physiotherapist located in the same medical practice as their
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5 221 general practitioner or located close to home), by following a recommendation from their friend
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8 222 or doctor, or based on prior experience (e.g. previously consulted the physiotherapist for other
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10 223 musculoskeletal conditions and/or their knee problem).

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13 224 Participant attendance at physiotherapy services often relied on funding being available to
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15 225 subsidise cost of care. Some participants described accessing physiotherapy in public hospital
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17 226 settings (e.g. Osteoarthritis Chronic Care Program(28)), some received Medicare rebates for
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19 227 physiotherapy services in the private sector (e.g. via Chronic Disease Management Plans(31)),
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22 228 whilst others were subsidised through their private health insurance or other regulatory body (such
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24 229 as worker compensation schemes). A few participants paid out-of-pocket to cover their
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27 230 physiotherapy costs. Participants often ceased their physiotherapy visits because funding ran out.
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30 231 Participants received physiotherapy care via individual consultations and/or via group sessions.
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32 232 Some participants attended one-on-one consultations several times before transitioning to a group
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34 233 setting. Most described undergoing an individual assessment with the physiotherapist, including
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37 234 those who ultimately participated in group classes. People referred to physiotherapy under the
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39 235 Chronic Disease Management Plan typically attended individual physiotherapy sessions up to five
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41 236 times.

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44 237 *Theme 3: Seeking physiotherapy care for pain and functional limitations*

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47 238 Participants spoke about their knee symptoms as a major driver of seeking care, including ongoing
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49 239 knee pain, swelling, clicking and muscle weakness. They expressed frustration with the pain they
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52 240 experienced, particularly when it made them unable to move the knee or walk properly. Words
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54 241 such as 'click', 'crunch' or 'crack' were commonly used to describe other symptoms. Participants
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3 242 spoke about feeling weak around their knees, which caused their knee to ‘give way’ or ‘collapse’.
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5 243 Participants also sought care because of difficulties with functional activities such as walking,
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7 244 driving, getting in/out of the bed/chair/toilet/shower, negotiating steps and squatting. Some
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10 245 participants avoided doing sports/recreational activities (e.g. cycling, surfing, running, swimming)
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12 246 for fear of exacerbating pain. Many people expected physiotherapists to provide treatments to
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15 247 relieve the pain and assist with building knee strength, as well as helping them to return to activities
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17 248 they previously enjoyed or were now unable to do.

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20 249 *Theme 4: Physiotherapy management focused on function and exercise*

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23 250 The physiotherapist typically assessed functional ability, including walking, squatting, getting
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25 251 in/out of a chair and negotiating stairs. Some participants were timed when performing functional
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27 252 tests, and others were asked to repeat the tests as they progressed through their treatment sessions.
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30 253 Participants consistently described exercise as a key component of their physiotherapy
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32 254 consultations. They received advice about different types of exercises for their OA, including
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34 255 strengthening, cardiovascular, stretching, balance and functional movement programs. Some
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37 256 participants were instructed to use exercise equipment such as elastic resistance bands and/or
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39 257 weights to progress the intensity of the exercises. For those who were given home exercise
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41 258 programs, exercise handouts or online instructions were provided. Some participants also attended
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44 259 supervised group exercise classes such as gym or fitness-based program, Pilates, hydrotherapy,
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46 260 balance and/or strengthening classes.

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49 261 Participants tended not to expect information about surgery, medications and knee injections from
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51 262 their physiotherapist, instead considering these domains of care as a doctor’s responsibility. Many
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54 263 did not see the need for physiotherapists to cover these options further and some participants felt

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3 264 that physiotherapists should refrain from providing any medication advice because they do not
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5 265 have prescription rights.
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8 266 Some participants received adjunctive treatments from physiotherapists such as massage, dry
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10 267 needling/acupuncture and manual knee mobilisation techniques to relieve muscle tightness and
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12 268 joint stiffness. Transcutaneous electrical nerve stimulation and electronic muscle stimulator
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14 269 machines were sometimes provided to relieve knee pain and stimulate muscles respectively. Other
15
16 270 common adjunctive treatments offered by physiotherapists included ultrasound, heat/cold pack,
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18 271 taping and using a knee brace. These were typically delivered during individual physiotherapy
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20 272 consultations.
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25 273 *Theme 5: Professional and personalized care*
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28 274 Generally, most participants were happy and satisfied with the physiotherapy care they received.
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30 275 Some described having trust in their physiotherapists, both in their clinical skills and professional
31
32 276 knowledge when managing knee OA. Most felt that their physiotherapist understood and
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34 277 appreciated the problems they were experiencing, and some were impressed that the
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36 278 physiotherapist was able to identify what was 'going on' with their knees. Participants were also
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38 279 confident that their physiotherapists could help them by providing practical advice and/or
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40 280 strategies to overcome their specific problems.
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45 281 Participants valued the highly personalised care they received and felt that physiotherapists
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47 282 generally provided care that was tailored to their needs. They spoke about their physiotherapist as
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49 283 being empathetic and understanding towards their condition/circumstances. Some felt that their
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51 284 physiotherapist 'knew them well', which enabled the physiotherapist to provide the care and
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53 285 support they desired/needed. Others highlighted the value of working collaboratively with their
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286 physiotherapist and appreciated having a ‘two-way discussion’, where the participant was asked
 287 for their input in devising a treatment plan for their OA. When care was not personalised,
 288 participants expressed a sense of disappointment, describing the treatment received as a ‘sausage
 289 factory’, ‘supermarket shelf’, or being a ‘one size fits all program’

290 *Theme 6: Physiotherapy to postpone or prepare for surgery*

291 Participants perceived that joint replacement surgery was inevitable for their knee problems. Many
 292 were informed of this by their doctor and some were already on hospital waiting lists for surgery.
 293 However, participants were also advised by their doctors/surgeons to delay surgery for as long as
 294 possible and some attended the physiotherapist in an effort to achieve this. Participants generally
 295 believed that physiotherapists were not able to ‘cure’ OA but could help in reducing its impact.
 296 Some described the role of physiotherapy as providing them with strategies to strengthen the knees
 297 and alleviate their OA symptoms in order to delay surgery. Whilst some participants ‘prepared’
 298 their knee for surgery by seeing a physiotherapist, others were keen to have surgery as soon as
 299 possible.

300 *Alignment with Clinical Care Standard for knee osteoarthritis*

301 Deductive analysis was used to generate Table 4, which summarises how participant experiences
 302 of physiotherapy care for knee OA aligned with the Clinical Care Standard.

303 **Table 4: Alignment of participant experiences of physiotherapy care with the national Clinical Care Standard**
 304 **for knee osteoarthritis (OA).**

Domains of care	Key elements of care	Patient experiences receiving care
Comprehensive assessment	Assess history of presenting symptoms and other health conditions	Patients expected their physiotherapists to provide treatments for relief of knee pain, to strengthen muscles and to return them to activities they previously enjoyed or were now unable to do.
	Conduct a physical examination	Patients described being typically assessed for functional ability (e.g. walking, squatting, getting in/out of a chair, negotiating stairs). Some were timed when performing

		functional tests, and others were asked to repeat the tests as they progressed through their treatment sessions.
	Evaluate psychosocial factors	Patients rarely described any psychosocial evaluation by their physiotherapist.
Diagnosis	Diagnose knee OA clinically	Patients generally had received a knee OA diagnosis from their doctor prior to seeing their physiotherapist. They often had knee imaging results to bring to their physiotherapy consultations.
	Consider imaging for alternative diagnosis only	Patients did not touch on this aspect as they typically went to their physiotherapist with imaging results from their doctor.
Education and self-management	Provide education about knee OA and available treatments	Patients perceived they had adequate pre-existing knowledge and understanding about OA.
	Individualized self-management plan based on physical and psychosocial needs	Patients felt that their physiotherapist generally provided care that was tailored to their needs. Patients rarely mentioned any psychosocial considerations when discussing self-management plans with the physiotherapist.
Weight loss and exercise	Support people who are overweight or obese to lose weight	Some patients did not perceive their weight as an issue. For those with weight problems, some described having a discussion with their physiotherapist about the importance of weight loss/maintenance.
	Tailor exercise according to needs and preferences	Patients received advice about various exercises (e.g. strengthening, cardiovascular, stretching, balance, functional movement programs) for their OA. Some used elastic resistance bands and/or weights for exercises. Some attended supervised group exercise classes (e.g. gym or fitness-based program, Pilates, hydrotherapy, balance, strengthening classes). Some also received adjunctive treatments (e.g. massage, dry needling/acupuncture, manual techniques, transcutaneous electrical nerve stimulation, electronic muscle stimulator machines, ultrasound, heat/cold pack, and taping).
	Establish weight and exercise goals, and refer to other services for assistance as required	Exercise goals and programs were routinely established with physiotherapists. Patients rarely described establishing weight loss goals or being referred to other healthcare providers for weight loss support.
Medications to manage symptoms	Offer appropriate medicines to manage symptoms, considering clinical condition and preferences	Patients did not expect information about medications and knee injections from their physiotherapist.
Patient review	Agree on regular reviews according to patient's needs	Patient attendance at physiotherapy services often relied on funding being available to subsidise cost of care. Reviews would often cease when funding ran out.
	Refer to specialist if knee OA symptoms worsen and severe functional impairment persists despite conservative management	Patients generally sought care from a physiotherapist to postpone, or prepare for, knee surgery.

Surgery	Offer timely joint surgery to patients not responding to conservative management	Patients generally sought care from a physiotherapist to postpone, or prepare for, knee surgery.
	Provide surgical information to inform treatment decision	Patients did not expect information about knee surgery from their physiotherapist.
	Only offer arthroscopy to patients with true mechanical locking	Patients rarely mentioned discussing knee arthroscopy with their physiotherapist.

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306 **Discussion**

307 This qualitative study explored experiences of people who had received physiotherapy care for
 308 their knee OA in Australia and how they aligned with the national Clinical Care Standard for knee
 309 OA.(8) Participants within this study valued physiotherapists' ability to provide professional and
 310 personalized care and described having a strong sense of trust and/or confidence in their
 311 physiotherapist. They also felt that physiotherapists understood their problems. These findings are
 312 consistent with previous research, which showed that patient satisfaction with physiotherapy care
 313 for a range of musculoskeletal conditions was generally high in Australia and other countries such
 314 as those in Northern Europe, North America, the United Kingdom and Ireland.(32)
 315 Physiotherapists' interpersonal and communication skills are important attributes to high patient
 316 satisfaction.(32) Our findings suggest that, generally, patients within this study perceived
 317 Australian physiotherapists to work in a patient-centred way to ensure that patients' treatment
 318 expectations, needs and preferences are respected. Such care aligned with the Clinical Care
 319 Standard relating to self-management, where patients received management plan that suited their
 320 needs and preferences. These findings were also similar to our previous study with
 321 physiotherapists,(7) who described offering an individualised self-management plan based on knee
 322 symptoms and signs, functional ability and goals.

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3 323 Participants utilised various referral pathways and a range of different funding models to access
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5 324 physiotherapy care through a diverse array of service delivery options. This suggests that there is
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8 325 not a single 'one size fits all' model of physiotherapy care that will suit the needs and individual
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10 326 circumstances of all Australians living with knee OA. Our findings highlight how important it is
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12 327 for healthcare systems to offer different models of physiotherapy care, in both the public and
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14 328 private sectors, for example, spanning individual consultations through to group exercise classes.
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16 329 This helps to reduce inequity of access to physiotherapy care for people with knee OA, which may
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18 330 arise from geographical location or socioeconomic status.(33) Indeed, a community-based survey
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20 331 of 1000 people with arthritis in Australia found that over two thirds of respondents felt that they
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22 332 did not cope well with their condition because of the health care they experienced, and felt that
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24 333 they had poor access to medical doctors, specialists and allied health professionals.(34) Allowing
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26 334 patients the flexibility to choose which type of physiotherapy service best suits their needs,
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28 335 preferences and financial situation also aligns with a philosophy of patient-centred care,(35, 36)
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31 336 and permits the patient to have some control over their own health care.

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36 337 Our findings highlight how reliant people with knee OA are on government-funded health care
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38 338 and/or third-party payers (such as private health insurers) to fund their physiotherapy care.
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40 339 Participants predominantly accessed and received care from physiotherapists in private practice
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42 340 settings and typically ceased physiotherapy when funding ran out and they were required to pay
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44 341 out-of-pocket for services. These findings are consistent with key Australian policy documents,
45
46 342 including the National Osteoarthritis Strategy,(37) that have called for expansion of funding to
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48 343 support OA care delivery, including care delivered by physiotherapists.(38) Given the chronicity
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50 344 of knee OA, regular reviews and follow-up are advocated to allow for monitoring of symptoms,
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52 345 permit timely changes to management, and to support effective self-management.(1) However,

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3 346 similar to a previous study in Australia,(39) the costs associated with physiotherapy treatments
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5 347 were identified by our participants as an important barrier to continuing to access physiotherapy
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7 348 care for OA. Our findings highlight the importance of funding mechanisms for physiotherapy
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9 349 services to relieve the financial burden that people experience when accessing necessary care for
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11 350 knee OA. Therefore, it remains unclear if patients were offered regular reviews by their
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13 351 physiotherapist, as recommended by the Clinical Care Standard, due to lack of funding being a
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15 352 potential barrier to regular reviews.
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20 353 Although pain was one of the important drivers of care-seeking in our participants, many also
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22 354 desired help from the physiotherapist to maintain or improve muscle strength and physical
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24 355 function. These findings highlight the need for physiotherapists to co-develop (with the patient) a
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26 356 multi-faceted management plan that does not only focus on pain relief strategies but also
27
28 357 incorporates interventions that target strength and assist patients to engage in activities that are
29
30 358 meaningful to them. It is thus not surprising that participants in our study described the important
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32 359 role that physiotherapists played in prescribing personalised exercise and addressing functional
33
34 360 deficits. A systematic review of patients' perceived health service needs for OA also showed that
35
36 361 one of the key reasons patients typically consulted physiotherapists was for exercise
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38 362 advice/prescription.(5) Our patient perspectives about the important role that physiotherapists play
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40 363 in prescribing exercise align with the perspectives of general practitioners,(40, 41) who often refer
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42 364 patients with chronic knee pain to physiotherapists for exercise. General practitioners describe lack
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44 365 of time as the most common barrier for them to initiate exercise with their patients, preferring
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46 366 instead to refer their patient to a physiotherapist.(40, 42) Similarly, physiotherapists themselves
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48 367 also perceived exercise and physical activity to be their main role in the management of people
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50 368 with knee OA (7, 43) and are confident to prescribe exercises to improve knee strength and range
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3 369 of movement.(44) However, inconsistent with the Clinical Care Standard, it appeared that patients
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5 370 were predominantly assessed by their physiotherapist for their knee symptoms and functional
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7 371 limitations, with little consideration of psychosocial factors. In addition, the management plan
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9 372 provided by the physiotherapist tended to overlook strategies specifically related to weight
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11 373 loss/maintenance. Our patient findings are also similar to our previous study with physiotherapists,
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13 374 (7) who tended to focus on biomedical assessment and management of knee OA. Regarding weight
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15 375 loss advice, they generally provided education about the importance of weight loss rather than
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17 376 advice about strategies to lose weight.
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22 377 Interestingly, participants tended to have an OA diagnosis already made prior to their
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24 378 physiotherapy consultation. They also believed that they already had adequate knowledge and
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26 379 understanding about their knee OA. This was despite the fact that participants appeared to have
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28 380 different perceptions about knee OA (describing it as 'wear and tear', 'bone on bone',
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30 381 'degenerative' and/or 'cartilage wear') and their belief that surgery is an inevitable consequence.
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32 382 These perceptions and beliefs about OA are similar to findings from another study exploring
33
34 383 reasons why patients resorted to surgical interventions for knee OA.(45) Once the participants in
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36 384 that study had been "diagnosed" with "bone-on-bone" changes, many disregarded exercise-based
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38 385 interventions (which they believed would damage their joint) in favour of alternative and
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40 386 experimental treatments (which they believed would help regenerate lost cartilage). Such
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42 387 perceptions and beliefs about OA are detrimental considering there is often a mismatch between
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44 388 imaging findings and OA symptoms (46, 47) and that conservative management such as exercise
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46 389 can reduce pain irrespective of radiographic severity.(48, 49) In addition, as some primary care
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48 390 specialists are hesitant to refer patients with OA to physiotherapy because they either perceive
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50 391 exercise to be ineffective or lack trust in physiotherapists to provide evidence-based care,(50)
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3 392 patients may not necessarily have been well-informed about the benefits of exercises during their
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5 393 specialist consultation.(51) In order to maximise success with exercise interventions, these
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8 394 findings suggest that physiotherapists could consider reframing their conversations to actively
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10 395 invite the patient to share their pre-existing knowledge about OA so that any perceptions may be
11
12 396 subtly corrected, and evidence-based educational resources shared. Physiotherapists should
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15 397 consider the language they use when discussing OA (i.e. avoid biomedical terms such as ‘wear
16
17 398 and tear’ or ‘degenerative’) so that they are not contributing to patient misinformation (i.e. joint
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19 399 surgery is inevitable; OA symptoms will worsen over time), and instead provide a sense of hope
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22 400 and optimism for prognosis with conservative care.

23
24 401 Participants also did not expect physiotherapists to provide them with information regarding
25
26 402 medications, knee injections and surgery even though these topics are advocated as important
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29 403 responsibilities of all health professionals when managing OA.(1, 52) Instead, participants
30
31 404 generally approached their medical doctors for advice in these domains of care. This is likely
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33
34 405 because, in Australia, physiotherapists can only provide advice about over-the-counter
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36 406 medications and do not have prescribing rights. Regarding knee surgery, patients mainly sought
37
38 407 physiotherapy care to postpone or prepare for knee surgery. Our patient findings are similar to our
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41 408 previous study with physiotherapists,(7) who had also felt that surgical advice was outside the
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43 409 scope of practice of physiotherapy care. However, some physiotherapists described their role as
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45 410 preparing patients for knee surgery when they were referred for physiotherapy.

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48 411 Some participants received adjunctive treatments from their physiotherapist, such as massage,
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50 412 acupuncture and electrotherapy interventions despite limited evidence to support their use.(1, 3,
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53 413 53) We do not know if participants specifically requested these treatments and/or if their
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55 414 physiotherapist helped the participant to make an informed treatment decision by discussing their

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3 415 limited treatment efficacy for knee OA. Patients with other musculoskeletal conditions, such as
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5 416 low back pain, often present to physiotherapists with pre-conceived ideas about physiotherapy
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7 417 treatment,(54) and may desire ‘hands-on’ treatment or any intervention that has previously eased
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9 418 their back symptoms. Physiotherapists may feel obliged to provide treatments with limited efficacy
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11 419 in order to meet the patient’s treatment expectation.
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15 420 A strength of our study was its qualitative design, which allowed us to explore the experiences of
16
17 421 people receiving physiotherapy care for knee OA in Australia. In order to explore diversity in
18
19 422 experiences, we interviewed a range of participants, including males and females of differing age,
20
21 423 occupational status and geographical location across Australia. Our study also has limitations.
22
23 424 There was no patient and public involvement in the design of this research. Participants responded
24
25 425 to advertisements (social media) and/or email invitations (research volunteer database) to
26
27 426 participate and thus our sample may be biased towards those who had favourable experiences with
28
29 427 physiotherapy and/or were successful at accessing physiotherapy. There were many more females
30
31 428 than males in the sample which may reflect the social media approach to recruitment. Participants
32
33 429 were reimbursed for their time with a \$50 gift card so they might have responded to interview
34
35 430 questions in a socially desirable manner. Efforts were made to reduce this effect by informing
36
37 431 participants at the beginning of the interview that there were no right or wrong answers to the
38
39 432 questions asked. Our sample was constrained to participants who could speak English and given
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41 433 that 21% of Australians speak a language other than English at home,(55) we do not know if our
42
43 434 findings reflect the experiences of people from culturally and linguistically diverse backgrounds.
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45 435 Furthermore, physiotherapists are a primary contact health profession in Australia so patient
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47 436 experiences with physiotherapy care for knee OA may be different in other countries where people
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49 437 can only access a physiotherapist on referral. Future research is particularly warranted in low to
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3 438 middle income countries, given that social factors such as education level and income influence
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5 439 patient access to allied health services such as physiotherapy.(56) Our findings may also not be
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7 440 applicable in countries where cultural beliefs differ considerably from the Australian context. The
8
9 441 perception of pain, health beliefs and concept of disability and its management often vary from
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11 442 one culture to another(57) and thus may influence patients' experiences managing their conditions.
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15 443 In conclusion, our findings provide evidence from the patient's perspective about the important
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17 444 role physiotherapists play in the care of Australians with knee OA, reinforcing the need for
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19 445 equitable access to physiotherapy services that are supported by a range of funding models.
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21 446 Findings highlight the importance of different pathways for accessing care to meet the needs of
22
23 447 individuals and ensure that all people with knee OA are adequately supported in managing their
24
25 448 condition. Overall, patients' experiences with receiving physiotherapy care for their knee OA were
26
27 449 partly aligned with the Clinical Care Standard, particularly regarding comprehensive assessment,
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29 450 self-management, and exercise.
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459 **Contributors**

460 PLT, KLB, KSD and RSH contributed to the study conception and design. PLT completed data
461 collection. PLT, KLB, LBJ, TE, KSD and RSH contributed to the data analysis and interpretation
462 of data. PLT wrote the first draft of the manuscript. PLT, KLB, LBJ, TE, KSD and RSH revised
463 the paper and provided scientific input. PLT, KLB, LBJ, TE, KSD and RSH approved the final
464 version of the manuscript.

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476 **Conflict of interest**

477 The authors declare that they have no competing interests.

478 **Data availability statement**

479 No data are available.

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For peer review only

Supplementary File 1: An audit trail of evidence showing examples of each stage of the data analysis

Original data (Individually assessed by two researchers)	Code/category (generated by the two researchers)	Sub-theme (based on discussion between the researchers)	Theme (based on discussion between the researchers)
- We started with x-rays, and that was done by my general practitioner	general practitioner	<i>Prior osteoarthritis care from other health professionals</i>	Presented with a pre-existing osteoarthritis diagnosis
- First of all, I went to a knee specialist and then I went to a sports medicine specialist and orthopaedic surgeon	knee specialist, sports medicine specialist, orthopaedic surgeon		
- Initially I went to the orthopaedic surgeon	orthopaedic surgeon		
- I went to a specialist in this	specialist		
- I did a course with Dr L, who is a rheumatologist	rheumatologist		
- I suffered quite a bit of pain and I was referred to a specialist	specialist		
- I went to see a surgeon with the possible view of having replacements done	surgeon		
- If it's bone on bone that doesn't replace the cartilage	Bone on bone, no cartilage	<i>Perception of adequate osteoarthritis knowledge</i>	
- I've got a fair bit of wear and tear but because of my age	Wear and tear due to age		
- It's just basically wear and tear, and it's really bone on bone	Wear and tear, bone on bone		
- I've had all those tests. So I had all that and that's when they discovered [osteoarthritis]	Tests to confirm osteoarthritis		
- My understanding is it's really just a bit of integral wear and tear of the joint	Understanding, wear and tear		
- I have a fairly good understanding of what osteoarthritis	Good understanding of osteoarthritis		

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3	- I just chose them because I knew they did Pilates and	Self- referral	<i>Referral pathways</i>	Wide variation in access and provision of physiotherapy care
4	exercise rehab			
5				
6	- follow up physiotherapy after the arthroscopy	Rehabilitation program		
7	- it [physiotherapy] was convenient because it was near	Self- referral		
8	my general practitioner			
9	- Probably word of mouth	Peer recommendation		
10	- I've actually had a work injury, so that [physiotherapy]	Through work		
11	was actually paid through my injury	compensation scheme		
12				
13				
14	- That [physiotherapy] was part of an advanced health care	Referred by doctor		
15	plan			
16	- The general practitioner sent me to a physiotherapist	Referred by doctor		
17				
18				
19	- I went to see a knee specialist, he suggested that	Referred by specialist		
20	physiotherapy might help strengthen the muscles			
21	- I got them off the EPC Plan	Medicare subsidy	<i>Funding models</i>	
22	- Subsidised by my health insurance	Health insurance		
23	- I've got private health cover, so I paid a gap	Health insurance		
24	- WorkCover then ceased to cover me	Work compensation		
25		scheme		
26				
27	- I've actually had a work injury, so that was actually paid	Work compensation		
28	through my injury	scheme		
29	- I was doing them myself out-of-pocket	Self-funded		
30	- I actually participated in the GLA:D programme	Group setting	<i>Individual vs group sessions</i>	
31				
32				
33	- They [the physiotherapist] wanted me to do the pilates in	Group setting		
34	the group			
35	- trying to get me involved in aqua aerobics	Group setting		
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38	- The first has been my regular physio who I've seen for	1:1		
39	probably about four years			
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3	- continuing with intermittent physiotherapy sessions as	1:1		
4	well as exercising at home			
5	- as part of the bike fit the physio did a full-on assessment	1:1		
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7	- the pain was just killing me. I would be in tears with the	Knee pain	<i>Knee symptoms</i>	Seeking physiotherapy
8	pain.			care for pain and
9				functional limitations
10	- I wanted to go and build-up the strength in my legs	Knee weakness		
11	- I've had this really sore knee that's basically collapsing	Knee pain and weakness		
12	underneath			
13	- it was swollen, hot, and I couldn't walk without a	Knee swelling, pain		
14	walking stick. It was very painful			
15	- Loss of support. I was having trouble, I was struggling	Knee weakness, poor		
16	walking because the knee would just suddenly give way,	support		
17	and I'd fall down			
18	- my knees were becoming more and more sore and	Knee pain, clicking		
19	clicking as I walked			
20	- my knees were becoming more and more sore and	Difficulty with steps	<i>Functional problems</i>	
21	clicking as I walked, particularly up sets of stairs	negotiation		
22	- my gait's not very good and it's throwing my back out. I	Walking difficulty		
23	was heading overseas and thought I've got to do			
24	something about this, I can't be hobbling around.	Walking difficulty		
25	- I could not stand up out the chair unaided	Difficulty getting off the		
26		chair		
27	- I was struggling to walk	Walking difficulty		
28	- Because I've lost capacity to squat	Difficulty squatting		
29				
30	- I think she [the physiotherapist] made me walk a little bit	Gait assessment	<i>Assessment of function</i>	Physiotherapy
31				management focussed on
32				function and exercise
33				
34				
35	- They'll [the physiotherapist] get you to do a few	Functional tasks		
36	activities to try and I guess test the limits of what you			
37	can and can't do with your knee – squatting, bending,			
38	rotation			
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- timing or just observing, getting in and out of a chair Functional tasks
 - the [physiotherapist] just got me doing step-ups Steps assessment
 - the [physiotherapist] got me to walk straight away from Gait assessment
him and then turn around and come straight back
 - she [the physiotherapist] recommended to keep riding Bike, cardio *Various types of
the pushbike exercises prescribed*
 - we went to the hydro Hydrotherapy
 - advised me to walk in the pool, go on the exercise bike, Water exercise, bike,
those sorts of things cardio
 - to walk on the treadmill for five minutes as a warmup Gym workout
 - she's [the physiotherapist] given me stretching exercises Theraband
with a rubber band
 - the [the physiotherapist] gave me, swimming, wall press Swimming, functional
ups, yeah, biceps, standing with dumbbells, and bridge, exercise, strengthening
lie on your back, clamshells, wall squats, single leg
stance with eyes open, seated abduction ball squeeze
 - I think it's the rheumatologist or my general practitioner Medication is GP's role *Surgery, medications,
probably, they would be the ones that would be issuing and injections are for
the drugs so I didn't think that would be a physio's doctors*
 - I get the impression the physio doesn't want to go into Medication is not the
the drug side of it because of the risks physiotherapist's role
 - the doctor had covered that [medication]. I didn't feel Medication is GP's role
that I need my physio [needs] to
 - No but it's not his [the physiotherapist] place to manage Medication is GP's role
it. Medications, the doctor does that.
 - Because the surgeon will know better about how Surgery is the specialist's
advanced it is role
 - I remember him [physiotherapist] saying, your next point Surgery is the specialist's
of call could be to go and speak to a physician who role
specialises in knees

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7 | - They [the physiotherapist] said what you need to do is we're going to refer you to the doctor, and he can then make the best decision on what treatment should happen with your knee. | Surgery is the specialist's role | | |
| 8
9 | - She [the physiotherapist] did a little massage on my calf and my knee | Massage | <i>Adjunctive treatments</i> | |
| 10
11 | - I think they've [the physiotherapist] played around with a TENS machine | TENS, electrotherapy | | |
| 12
13
14 | - He [the physiotherapist] gave me exercises; put a little machine on my knee | Electrotherapy | | |
| 15
16 | - she [the physiotherapist] would do deep tissue massage for five to 10 minutes | Massage | | |
| 17 | - I had some strapping of the knee | Taping | | |
| 18
19 | - I think I would've got some, a little bit of ultrasound | Ultrasound,
electrotherapy | | |
| 20
21
22 | - I think it's called EMS machine, an electronic stimulation machine | EMS, electrotherapy | | |
| 23
24 | - she [the physiotherapist] had advised me to wear a Tubigrip, just pressure bandage over the knee | Tubigrip, knee bracing | | |
| 25
26
27 | - He [the physiotherapist] was extremely good and I had complete trust in what he was doing | Trust in the physiotherapist,
confident | <i>Trust and/or confidence</i> | Professional and personalized care |
| 28
29
30
31 | - I think we had quite a good relationship and he [the physiotherapist] also knew my background and what I'd been through | Good relationship, trust | | |
| 32
33 | - She [the physiotherapist] had an instant grasp of what was happening and what was needed to try and assist | Understood my concern,
tried to help | | |
| 34
35
36 | - [The physiotherapist] was great and he was fairly well read and understanding of the situation | Competent, trust and confident | | |
| 37
38
39
40
41
42 | - what I can say about my physio is that I think he has a very good understanding of my knee problem and I think he understands that better than my doctors | Good relationship,
understanding | | |

- | | | |
|---|--|--|
| - They [the physiotherapist] were always very empathetic towards it | Empathetic | |
| - I think she [the physiotherapist] understood what my concerns were, she looked at all those things and helped me with them. | Specific to the concern, helped me | <i>Personalized care</i> |
| - She [the physiotherapist] was always checking back with me to make sure that it was possible for me to do it or if I could cope with it or whatever the case was | Checking with me | |
| - there was nothing that I wasn't confused about. And it was a two-way discussion | Two-way discussion | |
| - the [physiotherapist] assessed it best by working with me | Working with me | |
| - The surgeon said to me he probably gives me 10 years out of my right knee | Postpone surgery | Physiotherapy to postpone or prepare for surgery |
| - I actually am going to go to the orthopaedic specialist in February to have a look and just see whether I should have a replacement | Intention for knee surgery, preparation | |
| - My doctor just told me that I'm going to need a knee replacement eventually and so did the specialist surgeon, so I thought well I don't want to have a knee replacement just at this stage. | Need a knee replacement but not at this stage, prepare for surgery | |
| - We were talking about the advantages of doing it [surgery] sooner than later, but then he's [the physiotherapist] saying if I do it a bit later then we can strengthen the muscles in my knee | Prepare for surgery | |
| - I'm on a waiting list to have a knee replacement, but when that happens, who knows | Waiting list for knee replacement | |

EMS: Electrical muscle stimulation

EPC: Enhanced primary care

GLA:D: Good Life with Osteoarthritis: Denmark (GLA:D)

TENS: Transcutaneous electrical nerve stimulation

Standards for Reporting Qualitative Research (SRQR)

No.	Topic	Item	Page/line number
Title and abstract			
S1	Title	Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Page 1, line 1
S2	Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	Page 2, line 23
Introduction			
S3	Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	Page 5, line 95
S4	Purpose or research question	Purpose of the study and specific objectives or questions	Page 6, line 116
Methods			
S5	Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/interpretivist) is also recommended; rationale ^b	Page 7, line 146
S6	Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	Page 10, line 176
S7	Context	Setting/site and salient contextual factors; rationale ^b	Page 8, line 156
S8	Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale ^b	Page 8, line 156
S9	Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	Page 8, line 164
S10	Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale ^b	Page 8, line 168; Page 10, line 186
S11	Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Page 8, line 168
S12	Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Page 11, line 201
S13	Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification	Page 10, line 186

		of data integrity, data coding, and anonymization/deidentification of excerpts	
S14	Data analysis	Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale ^b	Page 10, line 186
S15	Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale ^b	Page 10, line 186; Page 14, line 224
Results/findings			
S16	Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Page 20, line 242; Page 24, line 348
S17	Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Page 14, line 227
Discussion			
S18	Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Page 26, line 354
S19	Limitations	Trustworthiness and limitations of findings	Page 31, line 476
S20	Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Page 33, line 521
S21	Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Page 33, line 511