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KNOWLEDGE AND ADHERENCE TO OSTEOARTHRITIS CLINICAL PRACTICE GUIDELINES AMONG PHYSIOTHERAPISTS IN FAISALABAD

Original Research

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ABSTRACT

Background: Osteoarthritis (OA) is a prevalent and disabling musculoskeletal condition worldwide, with clinical practice guidelines (CPGs) offering evidence-based recommendations to optimize its management. Despite the availability of guidelines such as those from OARSI, NICE, and EULAR, adherence among healthcare professionals remains inconsistent. This study was conducted to evaluate the knowledge and adherence of physiotherapists in Faisalabad to OA CPGs, aiming to identify gaps in practice and potential areas for improvement to enhance patient outcomes.

Objective: To evaluate the knowledge and adherence of Faisalabad physiotherapists to osteoarthritis clinical practice guidelines.

Methods: A cross-sectional survey was conducted in February 2023 across private and government healthcare settings in Faisalabad. Data were collected through in-person visits to hospitals and clinics, using a questionnaire based on OARSI, NICE, and EULAR guidelines. The questionnaire consisted of 25 statements covering diagnostic measures and therapeutic interventions for knee and hip OA. Demographic data, including gender, qualifications, and years of practice, were also recorded. Ethical approval was obtained, and informed consent was secured from all participants before survey administration. A total of 109 physiotherapists who met the inclusion criteria participated in the study.

Results: Among the 109 participants, 75.2% were female and 24.8% male. Most physiotherapists (70.6%) held a Doctor of Physical Therapy (DPT) qualification, while 26.6% held a master's degree. Full adherence to CPG11 was observed in 100% of participants, while 53.2% rejected CPG7. Overall, 92% demonstrated knowledge of and adherence to OA CPGs. However, adherence to first-line treatments, such as weight reduction and exercise, was inconsistent, with secondary interventions like manual therapy being more commonly favored.

Conclusion: The study identified a sufficient level of knowledge among physiotherapists regarding OA CPGs, though gaps in adherence were evident, particularly concerning the integration of evidence-based practices into clinical care. Addressing these gaps through targeted education and simplified guidelines may improve OA management and patient outcomes.

Keywords: Clinical governance, Evidence-based practice, Guidelines adherence, Osteoarthritis, Physical therapist, Practice guideline, Rehabilitation.

INTRODUCTION

Osteoarthritis (OA) is recognized as one of the most debilitating conditions globally, yet its management through adherence to clinical practice guidelines (CPGs) among physiotherapists remains insufficiently explored. Despite the existence of comprehensive evidence-based recommendations designed to optimize patient care, studies have frequently highlighted gaps in physiotherapists' knowledge of and adherence to these guidelines (1). The application of CPGs in musculoskeletal conditions is critical, as inadequate implementation may result in suboptimal treatment outcomes for patients with OA (2). Existing literature, however, often examines knowledge and adherence in isolation or focuses narrowly on specific treatments, offering a fragmented understanding of the evidence-to-practice gap (3). This highlights the pressing need for research that concurrently investigates both knowledge and adherence within a unified framework to provide a clearer understanding of how these gaps affect clinical practice.

Numerous international CPGs, such as those from EULAR, OARSI, and NICE, emphasize the role of physical activity and exercise as primary interventions for OA, supported by their ability to alleviate pain and disability (6). These guidelines, developed using approaches like the GRADE framework and the RIGHT checklist, have led to the creation of evidence-based recommendations targeting key clinical challenges (5). For example, a Chinese initiative identified 30 recommendations to address 15 major concerns in orthopedic care, aiming to enhance the scientific rigor of OA diagnosis and treatment and improve the quality of patient-centered medical services (5). However, the transition from evidence to practice is often hindered by insufficient clinician familiarity with these guidelines and inadequate adherence in daily practice.

Epidemiological studies underline the global significance of OA, with prevalence rates varying across populations and demographics. A large community-based survey in India, for instance, reported a knee OA prevalence of 28.7%, with notable risk factors such as female gender (31.6%) and advancing age (9). These findings underscore the importance of addressing modifiable risk factors through educational initiatives and preventive strategies, particularly in regions with aging populations (9). Despite such data, the gap in evidence-to-practice remains a barrier to effective OA management.

In Faisalabad, Pakistan, there is limited research assessing physiotherapists' knowledge of and adherence to OA CPGs, creating a critical knowledge gap. A focused examination of this population could provide insights into local practices, identify barriers to guideline adherence, and suggest targeted interventions to enhance the quality of OA care (10). This study, therefore, aims to investigate both the knowledge and adherence of Faisalabad physiotherapists to OA CPGs, offering a comprehensive evaluation of the evidence-to-practice gap and paving the way for informed strategies to optimize patient outcomes (11).

METHODS

A cross-sectional survey was conducted in February 2023 to evaluate the knowledge and adherence of physiotherapists to osteoarthritis (OA) clinical practice guidelines (CPGs). The study involved 109 physiotherapists who met the inclusion and exclusion criteria. Prior to participation, informed consent was obtained from all subjects through a combined consent and assent form attached to the questionnaire. Participants were informed about the study's objectives and procedures, ensuring they understood the nature of the questions being asked. Ethical approval for the study was granted by the University of Faisalabad. Physiotherapists who had not completed an undergraduate degree were excluded from the study.

The survey instrument consisted of a screening form capturing demographic data, including age, gender, years of practice, and familiarity with at least one OA guideline. The main questionnaire, based on the OA clinical practice guidelines developed by NICE, OARSI, and EULAR, comprised 25 statements assessing knowledge and adherence to guidelines for the management of knee and hip osteoarthritis. The survey included items adapted from established CPG recommendations to provide comprehensive coverage of evidence-based practices. Data collection was performed in person at hospitals and clinics where physiotherapists practiced. The procedure involved distributing the consent form, screening form, and questionnaire, accompanied by an explanation of the survey's purpose and content.

Participants represented a diverse cohort, with 75.2% females and 24.8% males. Among them, 70.6% held Doctor of Physical Therapy (DPT) qualifications, 26.6% held master's degrees, and 2.8% were trained at the transitional DPT level. Practice settings included

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teaching hospitals (20.2%), private hospitals (43.1%), and private clinics (34.9%). Regarding patient caseload, 40.4% reported seeing 0–5 patients daily, 33% saw 6–15 patients, and 22% managed 16–30 patients daily. Professional experience varied, with 78% practicing for 1–5 years, 18.3% for 5–10 years, and 3.7% for 10–15 years. Junior physiotherapists made up 66.1% of the cohort, while senior physiotherapists and consultants constituted 29.4% and 4.6%, respectively.

Data analysis was performed using SPSS version 20 for statistical evaluation and graphical representation. The results revealed varying levels of agreement with the 25 OA CPG statements. The highest adherence was observed for CPG11, with 100% acceptance, while CPG7 was rejected by 53.2% of participants. Overall, 92% of participants demonstrated substantial knowledge of and adherence to OA CPGs.

RESULTS

The study surveyed 109 physiotherapists, of whom 75.2% were females and 24.8% were males. The majority of participants were aged 25 years (30.3%), followed by 11% aged 30 years, with the lowest representation being physiotherapists aged 50 years (0.9%). Regarding qualifications, 70.6% of participants held a Doctor of Physical Therapy (DPT) degree, 26.6% had a master's degree, and 2.8% possessed a transitional DPT. Most physiotherapists were employed in private hospitals (43.1%) or private clinics (34.9%), while 20.2% worked in teaching hospitals, and only 1.8% were employed in district hospitals. Patient caseloads varied, with 40.4% of physiotherapists attending 0–5 patients daily, 33% attending 6–15, and 22% managing 16–30 patients daily. The duration of professional experience was predominantly between 1–5 years (78%), followed by 18.3% with 5–10 years, and only 3.7% with 10–15 years of experience.

The professional positions of participants were categorized into junior physiotherapists (66.1%), senior physiotherapists (29.4%), and consultants (4.6%). Documentation practices revealed that only 21.1% of physiotherapists consistently maintained records in a soft format, while 27.5% did so often or sometimes, and 15.6% rarely engaged in such practices. When analyzing adherence to OA CPGs, the survey responses highlighted variations in agreement with the guidelines. Full adherence was observed for CPG11, with 100% acceptance. Conversely, CPG7 had the lowest level of acceptance, with 53.2% of respondents rejecting it. Overall, 92% of the participants exhibited substantial knowledge of and adherence to OA clinical practice recommendations.

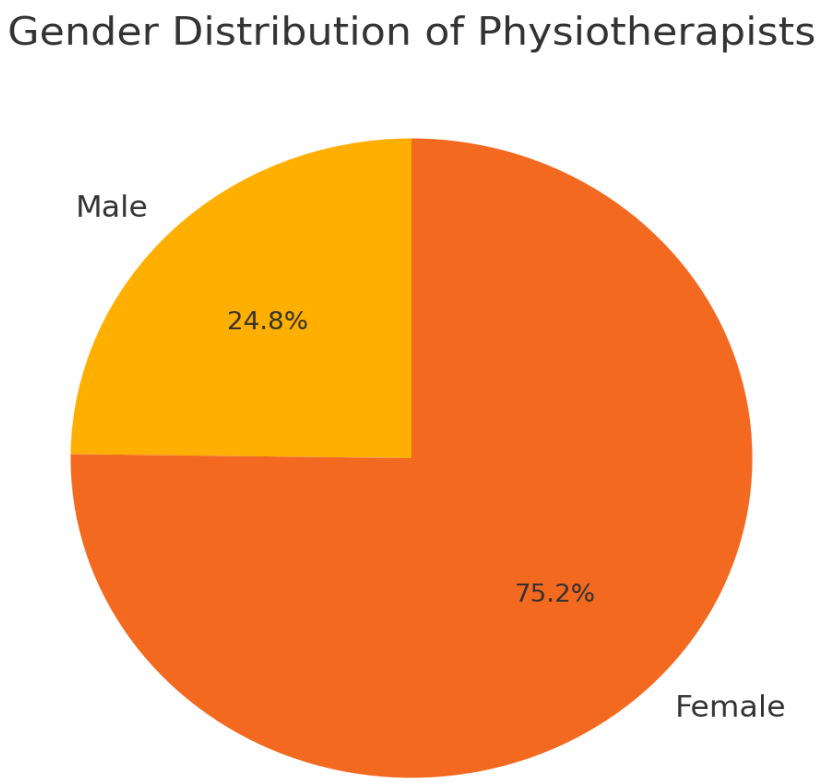

Figure 1 Gender Distribution of Physiotherapists

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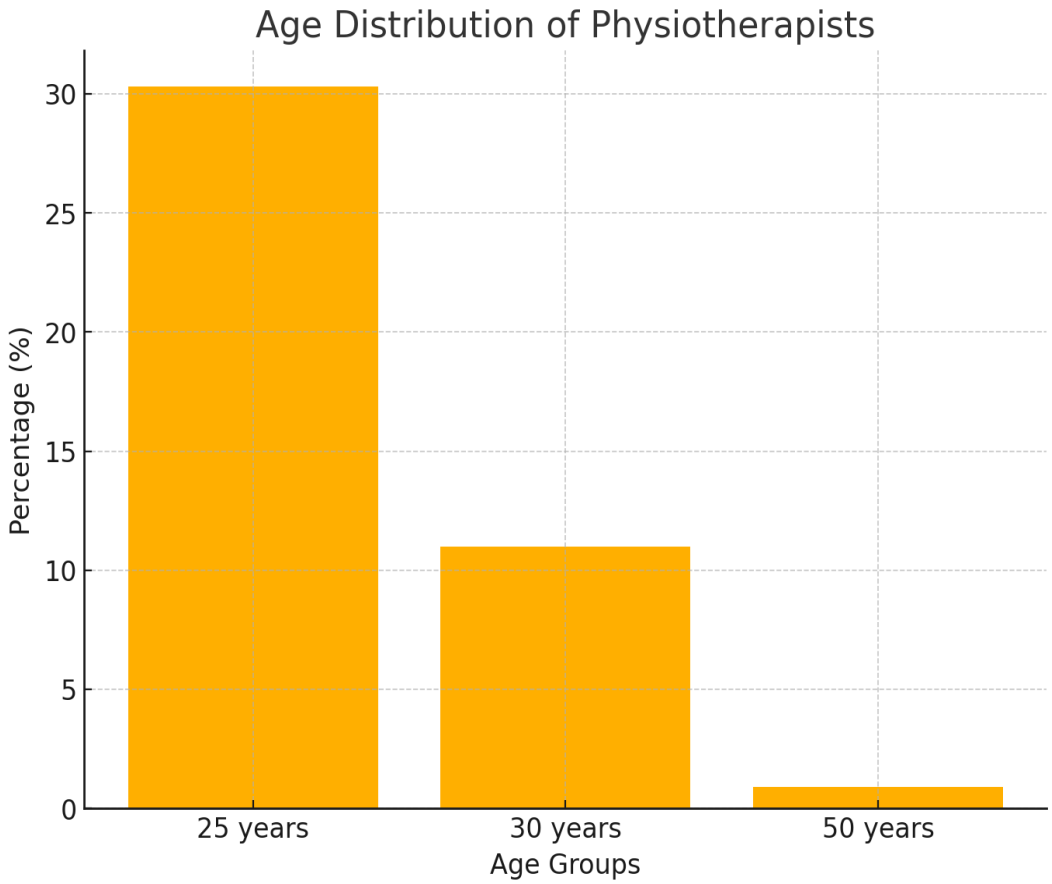

The charts above visually represent the demographic distribution of physiotherapists in the study. The first chart highlights the gender distribution, showing a majority of female participants (75.2%) compared to males (24.8%). The second chart illustrates the age distribution, with the largest group being 25 years old (30.3%), followed by 30 years (11%), and a minimal representation for 50 years (0.9%).

Figure 2 Age Distribution of Physiotherapists

Table 1 Screening form Variables (n=109)

Serial no.	Screening form variables	Frequency	Percentage
1.	Qualification		
	DPT	77	70.6%
	TDPT	3	2.8%
	Master's degree	29	26.6%
2.	Current area of practice		
	Teaching hospital	22	20.2%
	Private hospitals	47	43.1%
	District hospital	2	1.8%
	Private clinic	38	34.9%
3.	No. of patients		

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Serial no.	Screening form variables	Frequency	Percentage
	0-5	44	40.4%
	15-16	36	33%
	16-30	24	22.0%
	31-35	4	3.7%
	More than 45	1	9%
4.	Time period		
	1-5 years	85	78%
	5-10 years	20	18.3%
	10-15 years	4	3.7%
5.	Position of Therapist		
	Junior PT	72	66.1%
	Senior PT	32	29.4%
	Consultant	05	4.6%
6.	Documentation in soft form		
	Always	23	21.1%
	Often	30	27.5%
	Sometime	30	27.5%
	Rarely	17	15.6%
7.	PT Experience		
	1-2 years	48	44%
	3 years	9	8.3%
	4-5 years	24	22%

The table summarizes demographic and professional characteristics of the 109 physiotherapists surveyed. Regarding qualifications, 70.6% held a Doctor of Physical Therapy (DPT) degree, 26.6% had a master's degree, and 2.8% were transitional DPTs (TDPT). Practice settings were diverse, with 43.1% working in private hospitals, 34.9% in private clinics, 20.2% in teaching hospitals, and 1.8% in district hospitals. Most participants (40.4%) treated 0–5 patients daily, followed by 33% managing 15–16 patients, 22% handling 16–30, and 3.7% treating 31–35 patients; only 0.9% managed more than 45 patients daily. Experience levels varied, with 78% practicing for 1–5 years, 18.3% for 5–10 years, and 3.7% for 10–15 years. Junior physiotherapists comprised 66.1% of the sample, 29.4% were senior physiotherapists, and 4.6% were consultants. Documentation practices showed 21.1% always used soft formats, while 27.5% often or sometimes did, and 15.6% rarely documented digitally. In terms of years of practice, 44% had 1–2 years of experience, 8.3% had 3 years, and 22% had 4–5 years.

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Table 2 Level of concurrence with Osteoarthritis (OA) Clinical Practice Rules Statements

Total Clinical practice guidelines	Yes	No
CPG1	50.5%	49.5%
CPG2	59.6%	40.4%
CPG3	94.5%	5.5%
CPG4	98.2%	1.8%
CPG5	92.7%	7.3%
CPG6	84.4%	15.6%
CPG7	46.8%	53.2%
CPG8	80.7%	19.3%
CPG9	85.3%	14.7%
CPG10	67%	33%
CPG11	100%	0%
CPG12	85.3%	14.7%
CPG13	91.7%	8.3%
CPG14	96.3%	3.7%
CPG15	93.6%	6.4%
CPG16	92.7%	7.3%
CPG17	88.1%	11.9%
CPG18	91.7%	8.3%
CPG19	91.7%	8.3%
CPG20	66.1%	33.9%
CPG21	61.5%	38.5%
CPG22	60.6%	39.4%
CPG23	96.3%	3.7%
CPG24	85.3%	14.7%
CPG25	91.7%	8.3%

The table illustrates the level of concurrence among physiotherapists with 25 osteoarthritis (OA) clinical practice guidelines (CPGs). Full adherence was observed for CPG11 (100%), while high agreement was also noted for CPG4 (98.2%), CPG14 (96.3%), and CPG23 (96.3%). Other guidelines, such as CPG3 (94.5%), CPG15 (93.6%), and CPG5 (92.7%), also had strong concurrence rates. However, lower agreement levels were seen for CPG1 (50.5%), CPG2 (59.6%), and CPG22 (60.6%), with the lowest adherence recorded for CPG7 (46.8%). Moderate levels of agreement were observed for CPG10 (67%) and CPG20 (66.1%). Across the guidelines, the physiotherapists demonstrated substantial knowledge overall, with most CPGs showing agreement rates exceeding 80%, reflecting strong adherence to evidence-based OA management practices while highlighting variability in specific guidelines.

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DISCUSSION

The findings of this study indicate a moderate level of knowledge and adherence to osteoarthritis (OA) clinical practice guidelines (CPGs) among physiotherapists in Faisalabad. Participants represented various practice settings, including private hospitals, government facilities, and polyclinics. The survey highlighted a strong awareness of key first-line interventions, such as therapeutic exercise and patient education, with 92% of physiotherapists acknowledging their importance (Simone Battista et al., 2021). However, adherence to specific guidelines showed variability. For example, manual therapy, while considered a supplementary intervention with limited evidence for long-term efficacy, was frequently preferred, potentially detracting from time allocated to exercise-based approaches (12). This highlights the ongoing challenge of aligning clinical practice with evidence-based recommendations to optimize patient outcomes (12).

The results also underscore the need to address gaps in the practical application of CPGs. Although many physiotherapists reported awareness of weight management and exercise as primary strategies, there was insufficient emphasis on promoting weight loss or combating sedentary behaviors (15). Instead, secondary interventions, such as manual therapy and passive treatments, were more commonly employed. This may reflect barriers in translating knowledge into practice, including time constraints or patient preferences, which require further investigation (16). Furthermore, the observed reliance on radiographic imaging for OA diagnosis, despite guidelines advocating for clinical assessments, indicates potential overuse of imaging modalities, contributing to unnecessary healthcare costs without substantial diagnostic benefit (17).

The study's strengths include its focus on a specific cohort of physiotherapists with at least one year of professional experience, ensuring that findings are based on individuals with clinical exposure. The use of established guidelines from NICE, OARSI, and EULAR enhances the study's credibility by grounding it in robust evidence (12). However, limitations must be acknowledged. The exclusion of undergraduate physiotherapists and limited geographic scope may overestimate adherence levels and restrict generalizability. Additionally, the lack of qualitative insights into why certain guidelines, such as CPG7, were less accepted limits the depth of understanding regarding barriers to adherence (18).

Effective OA management relies on a multidisciplinary and evidence-based approach tailored to individual patient needs. While pain management, dietary modifications, and pharmacological interventions play critical roles, excessive reliance on medications or unproven methods may exacerbate complications. Incorporating therapeutic exercises and muscle strengthening is vital, as these interventions reduce joint load and improve functionality without adverse effects (19). This study highlights the importance of continuous professional education and training to bridge the evidence-to-practice gap and ensure optimal care for OA patients. Future research should explore the contextual and systemic factors influencing physiotherapists' adherence to CPGs, including patient demographics, clinical settings, and resource availability (20). Expanding the sample size and including diverse populations would further enhance the validity and applicability of findings.

CONCLUSION

This study demonstrated that physiotherapists in Faisalabad exhibit a solid understanding of key treatment protocols for osteoarthritis (OA), including diagnostic measures and evidence-based therapeutic approaches. The findings reflect a high level of clinical awareness regarding effective interventions, with a notable emphasis on first-line treatments such as TENS and ultrasound. However, while knowledge of and adherence to clinical practice guidelines was evident, there remains a critical need to bridge the gap between established evidence and earlier, less effective practices. Promoting the integration of simplified and accessible clinical practice guidelines into training and higher education programs could enhance physiotherapists' ability to deliver optimal care. This approach holds the potential to address current gaps and elevate the standard of OA management in clinical settings.

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AUTHOR CONTRIBUTIONS

Author	Contribution
Rubina Zulfqar	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Naiha Gull	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Rabia Ali	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Ayila Mouzam	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Sundas Farooq	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Aneela Umar	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published

REFERENCES

1. Gray B, Gibbs A, Bowden JL, Eyles JP, Grace S, Bennell K, et al. Appraisal of quality and analysis of the similarities and differences between osteoarthritis Clinical Practice Guideline recommendations: A systematic review. 2024.

2. Imai R, Tanaka S, Moriguchi K, Nishigami T, Tsushima EJMC. Japanese physical therapist's evidence-to-practice gap in knee osteoarthritis clinical practice guidelines: A cross-sectional study. 2024;22(1):e1841.

3. Battista S, Salvioli S, Millotti S, Testa M, Dell'Isola AJBMD. Italian physiotherapists' knowledge of and adherence to osteoarthritis clinical practice guidelines: a cross-sectional study. 2021;22(1):380.

4. Battista S, Salvioli S, Millotti S, Testa M, Dell'Isola A. Italian physiotherapists' knowledge of and adherence to osteoarthritis clinical practice guidelines: a cross-sectional study. BMC Musculoskeletal Disorders. 2021;22(1):380.

5. Bannuru RR, Osani M, Vaysbrot E, Arden N, Bennell K, Bierma-Zeinstra S, et al. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. Osteoarthritis and cartilage. 2019;27(11):1578-89.

6. Yen H, Huang CH, Huang IH, Hung WK, Su HJ, Yen H, et al. Systematic review and critical appraisal of psoriasis clinical practice guidelines: a Global Guidelines in Dermatology Mapping Project (GUIDEMAP). British Journal of Dermatology. 2022;187(2):178-87.

7. Battista S. A Multi-Method Analysis of the Cultural, Sociodemographic and Economic Elements in Osteoarthritis Care. 2023.

8. Lin I, Wiles L, Waller R, Goucke R, Nagree Y, Gibberd M, et al. What does best practice care for musculoskeletal pain look like? Eleven consistent recommendations from high-quality clinical practice guidelines: systematic review. 2020;54(2):79-86.

9. El Miedany Y, Elwakil WJER, Rehabilitation. Multidisciplinary patient-centred model of care for osteoarthritis: scoping review protocol—an initiative by the Egyptian Academy of Bone Health. 2023;50(1):3.

10. Cunningham J, Doyle F, Ryan JM, Clyne B, Cadogan C, Cottrell E, et al. Primary care-based models of care for osteoarthritis: a scoping review protocol. 2021;4.

11. Bruhn SM, Skou ST, Harris LK, Bandholm T, Møller A, Schrøder HM, et al. Usage of guideline-adherent core treatments for knee osteoarthritis before and after consulting an orthopaedic surgeon: a prospective cohort study. 2023;5(4):100411.

12. Battista S, Dell'Isola A, Manoni M, Englund M, Palese A, Testa MJBo. Experience of the COVID-19 pandemic as lived by patients with hip and knee osteoarthritis: an Italian qualitative study. 2021;11(10):e053194.

13. Egerton T, Hinman RS, Hunter DJ, Bowden JL, Nicolson PJ, Atkins L, et al. PARTNER: a service delivery model to implement optimal primary care management of people with knee osteoarthritis: description of development. 2020;10(10):e040423.

14. Cornwall N, Swaithes L, Woodcock C, Healey EL, Hider SLJRAiP. Implementation of physical activity interventions for people with inflammatory arthritis: an overview and future recommendations. 2023;7(1):rkac094.

15. Thom JM, Dennis S, Gibson KA, Livings R, Mills K, Schabrun SM, et al. Knee osteoarthritis patient perspectives of their care in an australian private physiotherapy setting: a qualitative exploratory interview study. 2023;24(1):564.

16. Toomey CM, Bhardwaj A, Browne J, Dowling I, Grealis S, Hayes P, et al. Guideline-based exercise management for hip and knee osteoarthritis: a cross-sectional comparison of healthcare professional and patient beliefs in Ireland. 2024;14(7):e080646.

17. Churchill LK. The development and evaluation of resources to improve the quality of care for patients with knee osteoarthritis: The University of Western Ontario (Canada); 2019.

18. Taheri M. A Physiotherapist-Led Education and Exercise Program from the Perspectives of Osteoarthritis Patients Awaiting Total Joint Arthroplasty and Healthcare Providers: An Interpretative Description Approach 2024.

19. Aily JB, de Almeida AC, de Noronha M, Mattiello SMJT. Effects of a periodized circuit training protocol delivered by telerehabilitation compared to face-to-face method for knee osteoarthritis: a protocol for a non-inferiority randomized controlled trial. 2021;22:1-15.

20. Aily JB, Barton CJ, Mattiello SM, Silva DDO, De Noronha MJIjot. Telerehabilitation for knee osteoarthritis in Brazil: a feasibility study. 2020;12(2):137.

21. Ackah M, Boakye H, Yeboah CO, Bello AI. Physiotherapy practice patterns in the management of patients with knee osteoarthritis: A national survey on the use of clinical practice guidelines. Physiotherapy Research International. 2022;27(4):e1964.

22. Kholvadia A. Exercise Training and Low Level Laser Therapy as a Modulate to Pain Relief and Functional Changes in Knee Osteoarthritis: University of the Witwatersrand, Faculty of Health Sciences; 2019.

