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Exploring the Research of Knee Osteoarthritis in Nigeria with Evidences, Gaps, and Future Directions: A Scoping Review

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ABSTRACT

Knee osteoarthritis (KOA) is one of the major causes of disability worldwide and Nigeria is facing a growing burden of this condition. This scoping review provided some evidences on KOA research in Nigeria while also pointing out the present research gaps with a focus on epidemiology, patient-reported outcomes, rehabilitation, surgical management, and outcome measure validation. Using a literature search of PubMed, AJOL, and DOAJ, studies on KOA were identified in Nigerian populations. The eligible articles included original research, trials, and case reports. Thirteen (13) studies were reviewed where prevalence ranged from 6.5% in hospital cohorts to 19.6% in community surveys. Obesity, prior injuries, and family history were the key risk factors. Exercise interventions such as Pilates, isometric, kinaesthesia: balance - agility training improved pain and function even though long-term outcomes are still scarce. Surgical studies reported the benefits of tranexamic acid and innovative approaches for severe deformities while validated Hausa and Yoruba outcome measures enhanced culturally sensitive assessment. Nigerian KOA research provides valuable insights but it is still limited by small sample sizes, single-centre designs, and lack of long-term data. It would be great if future work prioritizes multicentre trials, integration of validated outcome measures, and multidisciplinary methods.

Keywords: *Knee Osteoarthritis (KOA), Epidemiology, Obesity, Prior Injuries, Family History, Isometric Exercises*

INTRODUCTION

Over the decades, knee osteoarthritis has risen to become one of the most prevalent and disabling musculoskeletal disorders in the world which contributes noticeably to pain, disability, and reduced quality of life. The World Health Organization estimated that 528 million people were living with osteoarthritis in 2019, of which the knee is the most commonly affected joint, making up nearly 365 million cases (World Health Organization, 2023). It is characterised by progressive degeneration of articular cartilage, subchondral bone remodelling, and synovial inflammation, causing symptoms such as pain, stiffness, swelling, and functional limitations that impair daily activities, workforce participation, and social engagement (Leifer *et al*., 2023).

The prevalence of symptomatic KOA has surged globally as it had affected about 5.32% of men and 7.28% of women in middle age and above as of 2019, with projections indicating increases due to aging populations, rising obesity rates, and urbanization (Li *et al*., 2024; The Lancet Rheumatology, 2023). Years lived with disability (YLDs) connected to osteoarthritis have risen steadily since 1990, and KOA now ranks among the top ten causes of disability worldwide (The Lancet Rheumatology, 2023). The economic burden is likewise important as global costs has exceeded $136 billion annually in direct healthcare expenses and productivity losses (Leifer *et al*., 2023). However, beyond the financial impact, KOA is associated with

increased risk of co-morbidities such as cardiovascular disease and depression which further amplifies its public health significance (Hunter & Bierma-Zeinstra, 2019).

In sub-Saharan Africa, which includes Nigeria, KOA contributes largely to the regional burden contributing to nearly 40% of the global prevalence due to unique socioeconomic, environmental, and genetic factors (Bija *et al*., 2015). A community-based survey in Igbo-Ora, southwestern Nigeria, reported a 19.6% prevalence of symptomatic KOA among adults aged 40 years and older, with a female-to-male ratio of 1.2:1 and sharp increases beyond age 60 (Akinpelu *et al*., 2009). In another study, at the National Orthopaedic Hospital in Enugu, they found a 6.5% prevalence among adults over 30 years, disproportionately affecting women, housewives, and farmers which shows occupational and gender disparities (Ogbu *et al*., 2017). Some similar findings have been reported in other Nigerian cohorts, where obesity, previous knee injuries, and family history emerged as significant risk factors which stresses the multifactorial aetiology of KOA (Oyeyemi, 2014; Adelowo *et al*., 2018).

The burden of KOA in Nigeria is exacerbated due to restricted access to advanced treatment options, high costs of care, and poor health seeking behaviours of patients to tertiary health centres. Rehabilitation practices such as physiotherapy and exercise-based interventions are the cornerstone of management, however, adherence to standardized guidelines has not been consistent because of resource constraints (Akodu *et al*., 2017; Ogunbode *et al*., 2014). Moreover, psychosocial factors such as depression and low social support are common among elderly patients with KOA, worsening disability and reducing their quality of life (Afolabi & Gureje, 2024). This scoping review aims to evaluate research in the context of KOA in Nigeria while bringing up the research gaps and potential future directions.

Literature Review

Existing Evidence on Management and Outcomes

In Nigeria, research on knee osteoarthritis management is diverse in range of clinical practices which are usually influenced by scarcity of resources and culture. Physiotherapy interventions are of great importance and studies have shown that isometric strengthening and Pilates exercises significantly diminishes pain, improve function, and enhance movement among patients with KOA (Akodu *et al*., 2017). Also, some structured exercise programs have proven to relief pain and improve function across body mass index categories, however, overweight and obese patients have reported less pain relief compared to those of normal weight (Oyeyemi, 2014). Despite these benefits, adherence to standardized evidence-based rehabilitation protocols remains inconsistent, suggesting gaps in the implementation of the guideline.

Complex surgical interventions like the total knee replacement (TKR), are becoming common in Nigerian practice. A controlled trial in Southwest Nigeria revealed that intravenous tranexamic acid reduced blood loss and transfusion requirements appreciably in TKR which made a case for its use as a cost-effective perioperative option (Ugbeye *et al*., 2025). One case report also highlighted an innovative approach; preoperative percutaneous hamstring tenotomy to correct severe flexion deformity prior to TKR, which improved the surgical outcome (Maitama & Alabi, 2023).

In the same vein, validated outcome measures have strengthened culturally sensitive evaluation of KOA in Nigeria. For instance, the Ibadan Knee/Hip Osteoarthritis Outcome Measure (IKHOAM) has been validated in Hausa populations, demonstrating strong internal consistency and reliability (Odole & Akinpelu, 2008). Also, the Yoruba translation of the WOMAC and Lequesne Algofunctional Index have displayed brilliant psychometric abilities which supports the reliable assessment of pain, stiffness, and functional disability across diverse linguistic groups (Ojoawo & Akinwumi, 2018; Akinpelu *et al*., 2023). Radiographic correlations have also been explored in the country where the Kellgren–Lawrence grading was compared with patient-reported outcomes. It was found that radiographic severity does not consistently align with symptom burden which emphasizes the importance of integrating patient-reported measures into clinical decision-making (Nze *et al*., 2021; Adelowo *et al*., 2018)

RESEARCH METHOD

A broad literature search was conducted to identify studies on KOA in Nigeria using the following databases; PubMed (https://www.nlm.nih.gov/medline/medline_overview.html), the Directory of Open Access Journals (https://doaj.org/), and African Journals Online (https://www.ajol.info/index.php/ajol). To achieve this, the search terms combined keywords and Medical Subject Headings (MeSH) related to knee osteoarthritis, Nigeria, management, epidemiology, rehabilitation, and surgical outcomes. Also, boolean operators (AND, OR) were applied to refine the search.

Inclusion Criteria

Studies were included if they met the following criteria:

1. Focused on knee osteoarthritis in Nigerian populations.
2. Reported on epidemiology, risk factors, clinical presentation, management strategies, or outcomes.
3. Utilized validated clinical, radiographic, or patient-reported outcome measures (e.g., WOMAC, Lequesne Index, IKHOAM).
4. Conducted in Nigeria and published in English.
5. Peer-reviewed original research articles, randomized controlled trials, observational studies, and case reports.

Exclusion Criteria

The following were excluded:

1. Studies not specific to KOA or not involving Nigerian populations.
2. Secondary publications such as editorials, commentaries, letters to the editor, and conference abstracts.
3. Articles published in journals listed on Beall's list (2021) or identified as predatory.
4. Duplicate studies, which were removed after cross-checking across databases.

RESULT AND DISCUSSION

Study description

The search of the three databases produced 2,329 results. Removal of book chapters, conference materials, articles from other countries outside Nigeria, encyclopaedic content, and abstract screening resulted in the exclusion of 2,202 records. The resulting articles (n = 127) were first deduplicated; narrative review articles, commentaries and other reports outside of the Nigerian context were also eliminated. Out of the studies assessed, 13 were found eligible based on the inclusion criteria as represented on figure 1.

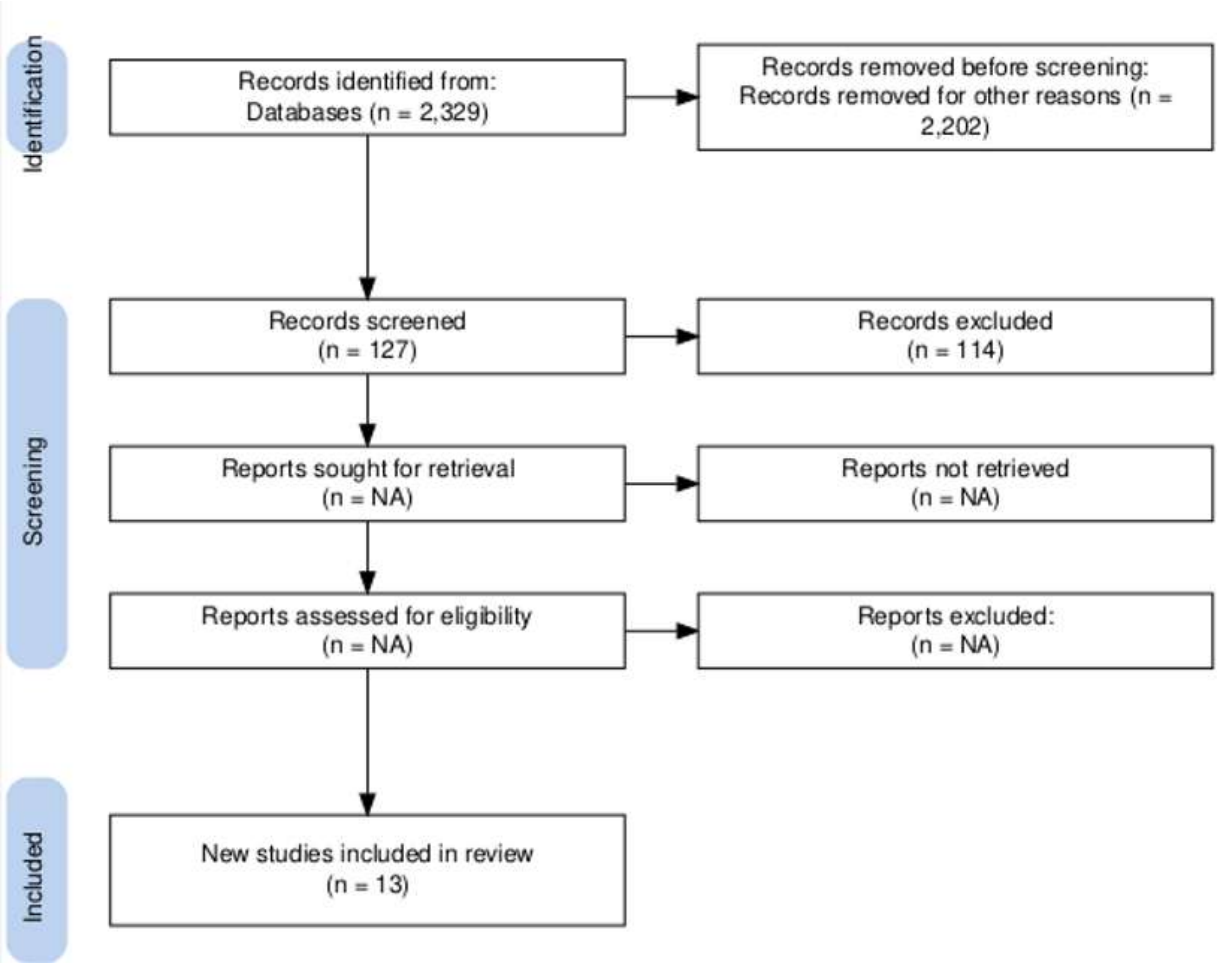

Figure 1. PRISMA diagram of article selection (Haddaway *et al.,* 2022)

Review of selected paper (see also; table 1, 2 and 3)

Epidemiology and Risk Factors

Research on the prevalence and determinants of knee osteoarthritis (KOA) in Nigeria highlights its growing public health burden. At the National Orthopaedic Hospital Enugu, the prevalence of symptomatic KOA was reported at 6.5%, with higher rates among women, housewives, and farmers. Obesity, previous knee injuries, and family history were identified as major risk factors (Ogbu *et al*., 2017). Ogunbode *et al*. (2014) reported that in primary care settings, patients with KOA reported significantly poorer self-rated health and functionality compared to those without the condition. Waist circumference and stiffness also emerged as strong correlates in their study. The radiographic study analysis of Adelowo *et al*. (2018) further confirmed that

age was directly associated with Kellgren-Lawrence (K-L) severity, while gender and disease duration showed no significant relationship.

Patient-Reported Outcomes and Coping

Aiyegbusi *et al*. (2019) found pain coping strategies to significantly influence disability and quality of life and passive coping was linked to worse outcomes and active coping was associated with improved functionality. Clinical-radiographic correlations in the study of Nze *et al*. (2021) revealed discordance between symptom burden and radiographic severity, as WOMAC scores did not consistently align with K–L grades emphasizing the importance of patient-reported outcomes in guiding management.

Rehabilitation and Exercise Interventions

Interestingly, pilates and isometric exercises both revealed noteworthy reductions in pain and disability, alongside improvements in mobility (Akodu *et al*., 2017). In the study of Oyeyemi, (2014), body mass index was shown to influence treatment outcomes because overweight and obese patients feeling less pain relief despite comparable functional gains. Adhama *et al*. (2021) is carrying out a randomized controlled trial protocol to investigate the optimal frequency of kinaesthesia, balance, and agility (KBA) training, comparing twice-weekly and thrice-weekly sessions to conventional physiotherapy.

Outcome Measure Adaptation and Validation

Cultural and linguistic adaptation of KOA assessment tools has been a major focus, and with some success. The Hausa version of the Ibadan Knee/Hip Osteoarthritis Outcome Measure demonstrated validity and internal consistency (Odole & Akinpelu, 2008). Similarly, the Yoruba translation of the reduced WOMAC showed strong correlations with the original English version and excellent test–retest reliability (Ojoawo & Akinwumi, 2018). More recently, the Yoruba Lequesne Algofunctional Index was cross-culturally adapted and psychometrically validated, showing good internal consistency, strong structural validity, and no floor or ceiling effects (Akinpelu *et al*., 2023).

Surgical and Perioperative Management

In their work, Ugbeye *et al*. (2025) showed evidence that intravenous tranexamic acid significantly reduced blood loss and transfusion requirements in total knee replacement, supporting its use as a cost-effective perioperative strategy. Preoperative percutaneous hamstring tenotomy was reported as a useful adjunct for correcting severe flexion deformity prior to knee replacement in the surgical case report of Maitama & Alabi, (2023).

Table 1. Summary of the information on the selected articles

Authors	Topic	Scope/Crucial Information	Conclusion
Maitama and Alabi, (2023)	Preoperative Percutaneous Hamstring Tenotomy in a Patient with Severe Flexion Deformity Undergoing Primary Total Knee Replacement: Case Report and Literature Review	Case Report and Literature Review This case report describes a 78-year-old man with severe bilateral knee osteoarthritis and fixed flexion deformities, which complicate achieving full extension during total knee replacement.	The technique minimized the need for extensive bone resection and soft tissue dissection, suggesting it may be a useful adjunct for managing severe flexion contractures in selected patients undergoing primary knee replacement.
Odole and Akinpelu, (2008)	Validity and internal consistency of a Hausa version of the Ibadan knee/hip osteoarthritis outcome measure	Clinical Trial Ibadan Knee/Hip Osteoarthritis Outcome Measure (IKHOAM) system tested on 67 hausa speaking participants (17 males, 50 females).	The Hausa version of IKHOAM meets the criteria for validity and internal consistency and may be used in the Hausa speaking parts of Nigeria and other West African countries.
Ugbeye *et al*. (2025)	Intravenous Tranexamic Acid Reduces Blood Loss and Transfusion Requirements in Total Knee Replacement Surgery: A Double–Blind Controlled Study in a Regional Hospital, Southwest, Nigeria	Randomized, double-blind study Evaluation of the effect of intravenous tranexamic acid (TXA) in 36 patients (46 knees) versus placebo in 36 patients (52 knees) amongst 72 patients undergoing total knee replacement surgery.	TXA significantly reduced intraoperative, postoperative, and total blood loss, as well as haemoglobin drop, compared to placebo. Patients receiving TXA also had a lower transfusion rate, confirming its effectiveness in minimizing perioperative bleeding and transfusion needs.
Aiyegbusi *et al*. (2018)	Pain Coping Strategies with Functional Disability and Quality of Life in Patients with Knee Osteoarthritis in Lagos, Nigeria	This study of 102 patients with knee osteoarthritis in Lagos examined how coping strategies affect pain, disability, and quality of life.	The findings suggest that incorporating active coping approaches into management could improve outcomes for patients with knee osteoarthritis.
Akinpelu *et al*. (2023)	Cross-cultural adaptation and psychometric testing of the Yoruba lequesne algofunctional index of knee	This study translated and validated the Lequesne Algofunctional Index of Knee Osteoarthritis (LAIKOA) into	The Yoruba LAIKOA is reliable and valid, and it is recommended for use in clinical settings in

	osteoarthritis among patients with knee osteoarthritis	Yoruba for use among 108 Nigerian patients.	southwestern Nigeria and other Yoruba-speaking populations.
Adhama *et al*. (2021)	Effects of variable frequencies of kinaesthesia, balance and agility exercise program in adults with knee osteoarthritis: study protocol for a randomized controlled trial	Randomized controlled trial This study aimed at evaluating the optimal frequency of kinaesthesia, balance, and agility (KBA) exercises for adults with knee osteoarthritis by recruiting 120 patients from four hospitals in North-western Nigeria.	Research still ongoing as at the time of publication of the paper.
Ogunbode *et al*. (2014)	Physical Functionality and Self-Rated Health Status of Adult Patients with Knee Osteoarthritis Presenting in a Primary Care Clinic	This cross-sectional study of 400 adults at University College Hospital, Ibadan who are clinically diagnosed are knee osteoarthritis and those who are not.	Knee osteoarthritis significantly impairs the health and daily activities of adult patients in Ibadan, Nigeria. Healthcare workers need to screen adult patients routinely at first-contact to detect knee osteoarthritis clinically early and manage appropriately.
Nze *et al*. (2021)	Clinicoradiographic correlation between the Western Ontario and McMaster Universities Osteoarthritis Index and Kellgren–Lawrence system assessments among patients with osteoarthritis of the knee presenting at a tertiary hospital in south-eastern Nigeria	This study investigated whether clinical symptoms and radiographic findings align in Nigerian patients with knee osteoarthritis. They used WOMAC scores and Kellgren–Lawrence (K–L) grades in 128 patients (215 knees).	There was no correlation between clinical and radiographic features in knee osteoarthritis in this sample of patients managed at a tertiary hospital in south-eastern Nigeria.
Ogbu *et al*. (2017)	Prevalence And Pattern of Osteoarthritis of The Knee at National Orthopaedic Hospital Enugu	This cross-sectional study at the National Orthopaedic Hospital Enugu assessed 2,310 adults aged 30 and above. It found a 6.5% prevalence of symptomatic knee osteoarthritis, with cases more common among women (male-to-female ratio 1:2.6), housewives, and farmers.	The prevalence of osteoarthritis of the knee at National Orthopaedic Hospital Enugu is 6.5%. Prevalence was higher in the female sex, house wives and farmers. Obesity was the major risk factor while valgus knee was the commonest presentation.

Ojoawo and Akinwumi, (2018)	Translation and Validation of the Reduced Western Ontario and Mcmaster Universities Osteoarthritis Index (WOMAC) From English to Yoruba	This study translated and validated the reduced Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) into Yoruba for use among patients with knee osteoarthritis in southwest Nigeria. Sixty radiographically confirmed patients participated.	It can be concluded from the study that the Yoruba version of the reduced Western Ontario and McMaster Universities (WOMAC) Osteoarthritis Index is reliable and valid as an outcome measure for assessing patients with knee osteoarthritis.
Akodu *et al*. (2017)	Comparative effects of pilates and isometric exercises on pain, functional disability and range of motion in patients with knee osteoarthritis	This study compared Pilates and isometric exercises in managing knee osteoarthritis among 33 patients in Lagos, Nigeria. Participants were divided into three groups: Pilates + TENS, isometric exercise + TENS, and lifestyle modification + TENS, with interventions carried out twice weekly for 8 weeks. Outcomes were measured using pain scales, functional disability scores, and range of motion tests.	Pilates and isometric exercises can reduce pain, improve functional ability and also range of motion of patient with knee osteoarthritis.
Oyeyemi, (2014)	Body mass index, pain and function in individuals with knee osteoarthritis	This study examined how body mass index (BMI) influences pain and function outcomes in knee osteoarthritis patients undergoing a four‐week exercise program. Forty‐six participants across normal weight, overweight, and obese categories received standardized therapy twice weekly.	Exercise improved pain and function scores in OA patients across the BMI groups. Overweight independent of obesity may interfere with effectiveness of pain control during the symptomatic treatment of knee OA patients.
Adelowo *et al*. (2018)	Correlates of radiographic changes in Nigerian patients with osteoarthritis of the knee	This retrospective study reviewed 318 Nigerian patients with knee osteoarthritis over a 10‐year period to assess links between age, gender, disease duration, and radiographic severity using Kellgren–Lawrence (K–L) grading.	This study, as in previous ones, showed that the age of the patient with knee OA is directly proportional to the likely severity of the K-L radiographic grading, but not with disease duration.

Relationship between individual and disease specific factors and knee osteoarthritis

Tables 2 & 3 provides an overview of how demographic and clinical variables relate to knee osteoarthritis in Nigerian populations. Tables 2 highlights the influence of age, sex, body mass index, occupation, and comorbidities. Across studies, older age and female sex consistently emerged as strong predictors, with obesity further amplifying risk by increasing biomechanical stress on the knee. Occupational exposures, particularly among farmers and housewives engaged in repetitive knee-loading activities, were also linked to higher prevalence, while comorbidities such as hypertension and depression compounded disease severity. Tables 3 on the other hand emphases on clinical manifestations of KOA such as pain, stiffness, deformity, fatigue, and disability. Pain and stiffness were the most consistently reported symptoms which shows association with functional limitations and lessened quality of life. Some deformities such as valgus knee and flexion contractures were noted in the hospital-based cohorts, while disability was captured amongst the patient-reported outcome measures pointing to a disparity between radiographic severity and actual lived experience.

Table 2. Association between individual factors and knee osteoarthritis

Authors	Older Age	Sex	High BMI	Education/Living Standard	Co-morbidities
Maitama and Alabi, (2023)	✓	M	X	–	–
Odole and Akinpelu, (2008)	✓	M & F	–	–	X
Ugbeye *et al*. (2025)	–	–	–	–	–
Aiyegbusi *et al*. (2019)	✓	M & F	–	–	–
Akinpelu *et al*. (2023)	✓	M & F	–	✓	–
Adhama *et al*. (2021)	–	M & F	–	✓	–
Ogunbode *et al*. (2014)	✓	M & F	✓	✓	–
Nze *et al*. (2021)	✓	M & F	–	–	–
Ogbu *et al*. (2017)	✓	M & F	✓	✓	–
Ojoawo and Akinwumi, (2018)	✓	M & F	–	–	–
Akodu *et al*. (2017)	✓	M & F	✓	✓	–
Oyeyemi, (2014)	✓	M & F	✓	–	–
Adelowo *et al*. (2018)	✓	M & F	✓	–	–

✓ Association Found; M Male; F Female; – No Association/Not Applicable

Table 3. Association between disease specific factors and knee osteoarthritis

Authors	Pain	Deformity	Fatigue	Joint Stiffness	Disability
Maitama and Alabi, (2023)	✓	✓	–	✓	✓
Odole and Akinpele, (2008)	✓	–	–	–	–
Ugbeye *et al*. (2025)	–	–	–	–	–
Aiyegbusi *et al*. (2019)	✓	–	–	✓	✓
Akinpelu *et al*. (2023)	✓	–	–	–	–
Adhama *et al*. (2021)	✓	✓	✓	✓	✓
Ogunbode *et al*. (2014)	✓	✓	–	✓	✓
Nze *et al*. (2021)	✓	✓	–	✓	✓
Ogbu *et al*. (2017)	✓	✓	–	✓	✓
Ojoawo and Akinwumi, (2018)	✓	–	–	✓	✓
Akodu *et al*. (2017)	✓	–	–	✓	✓
Oyeyemi, (2014)	✓	–	–	–	✓
Adelowo *et al*. (2018)	✓	✓	–	✓	✓

✓ Association Found; M Male; F Female; – No Association/Not Applicable

Discussion

This scoping review discussed research on knee osteoarthritis (KOA) in Nigeria. The prevalence of KOA in Nigeria is significant, predominantly among women, older adults, and individuals in physically demanding occupations such as farming and housekeeping (Ogbu *et al*., 2017). Globally, obesity and aging were identified as dominant contributors to KOA burden in the studies of Hunter & Bierma-Zeinstra, (2019) and The Lancet Rheumatology, (2023) which corroborates local studies which have implicated obesity consistently as a major risk factor, both for disease onset and progression, and is associated with worse pain outcomes despite functional improvements following exercise interventions (Ogunbode *et al*., 2014; Oyeyemi, 2014).

A study by Aiyegbusi *et al*. (2019) showed that coping strategies significantly influences disability and quality of life, with passive coping linked to poorer outcomes. Moreover, according to Nze *et al*. (2021); Adelowo, *et al*. (2018), clinical–radiographic discordance is evident, as WOMAC scores do not consistently align with Kellgren–Lawrence grades which is in accordance with the works of Bellamy *et al*. (1988); Roos & Lohmander, (2003) which similarly emphasizes the limited correlation between radiographic severity and patient-reported outcomes, advocating for validated instruments such as WOMAC, KOOS, and the Lequesne Index. This reinforces the importance of prioritizing patient-reported symptoms and functionality in clinical decision-making, rather than relying solely on radiographic severity.

Pilates and isometric exercises both reduced pain and disability while improving range of motion as reported by Akodu *et al*. (2017), and kinaesthesia, balance, and agility (KBA) training is being investigated for optimal frequency in randomized trials (Adhama *et al*., 2021). These findings align with international guidelines that emphasize exercise as a cornerstone of KOA management (Bannuru *et al*., 2019; AAOS, 2021). The randomized trials and studies of Fransen *et al*. (2015) and Messier *et al*. (2013) further support that exercise combined with dietary weight loss yields significant improvements in pain and function among overweight and obese adults.

The Hausa version of the Ibadan Knee/Hip Osteoarthritis Outcome Measure (Odole & Akinpelu, 2008), the Yoruba WOMAC (Ojoawo & Akinwumi, 2018), and the Yoruba Lequesne Algofunctional Index (Akinpelu *et al*., 2023) all demonstrated strong validity and reliability. These tools enhance inclusivity and ensure accurate assessment across Nigeria's diverse linguistic groups.

International standards have been set and practised as seen in the work and guideline of Fillingham *et al*. (2018) and AAOS, (2022) where perioperative strategies, including routine use of tranexamic acid are endorsed and have been shown to reduce transfusion rates, improve cost and improve recovery. This is similar and in agreement with the study of Ugbeye *et al*. (2025) where intravenous tranexamic acid was shown to reduce blood loss and transfusion requirements in total knee replacement (Ugbeye *et al*., 2025). The complex case in the work of Maitama & Alabi, (2023) where preoperative percutaneous hamstring tenotomy was a useful adjunct for correcting severe flexion deformity prior to knee replacement also establish innovation in surgical practice tailored to Nigerian patient populations and resource constraints.

Research Gap and Future Direction

There are still several critical gaps which limit the translation of research findings into widespread clinical practice in spite of the notable advances in the study of knee osteoarthritis in Nigeria. Most studies have been single-centred with relatively small sample sizes which have restricted the useability and applicability of their conclusions across diverse populations. This limitation is important given the country's vast demographic, genetic and cultural diversity. Larger and multicentre studies are needed to capture these differences and provide more representative data.

Another major gap is the paucity of long-term outcome data. Rehabilitation-focused studies have confirmed short-term improvements in pain, function, and quality of life after interventions such as Pilates, isometric strengthening, and the likes (Akodu *et al*., 2017; Adhama *et al*., 2021). However, few studies have tracked patients beyond the immediate post-intervention period and this leaves a trail of unanswered questions about the sustainability of these benefits and their impact on disease progression. Similarly, surgical studies, including those on total knee replacement and perioperative optimization with

tranexamic acid (Ugbeye *et al*., 2025), provide encouraging results but rarely report medium- to long-term outcomes such as implant survival and functional recovery. This gap echoes worldwide priorities where calls for pragmatic multicentre randomized controlled trials and long-term follow-up are central to advancing KOA care (The Lancet Rheumatology, 2023; Bannuru *et al*., 2019).

The integration of validated outcome measures into routine clinical practice are also limited. Nigeria has made applaudable contributions by culturally adapting tools such as the Hausa Ibadan Knee/Hip Osteoarthritis Outcome Measure (Odole & Akinpelu, 2008), the Yoruba WOMAC (Ojoawo & Akinwumi, 2018), and the Yoruba Lequesne Algofunctional Index (Akinpelu *et al*., 2023). However, while these instruments have shown strong validity and reliability, their consistent use in clinical settings is not famous. If these tools are embedded into everyday practice, it would allow for standardized monitoring of patient progress, facilitate cross-study comparisons, and strengthen the evidence base for patient-centred care. Similar challenges exist everywhere in the world as implementation science is increasingly recognized as vital for bridging the gap between validated research tools and real-world practice (Bannuru *et al*., 2019).

In the same vein, psychosocial areas of KOA are underexplored in Nigeria and studies have even delved into the role of coping strategies and social support in shaping patient outcomes (Aiyegbusi *et al*., 2019; Afolabi & Gureje, 2024), but few have actually checked interventions that directly target these factors. In view of the strong association between KOA and depression and disability, future research should look into multidisciplinary approaches that will bring physiotherapy, psychological support, and community-based interventions together. This would align with global perspectives that emphasize holistic management of KOA beyond physical symptoms (Hunter & Bierma-Zeinstra, 2019).

Finally, there is a pressing need for health systems research to evaluate the accessibility, affordability, and equity of KOA care in Nigeria. Out-of-pocket costs, limited surgical capacity, and uneven distribution of rehabilitation services are strong barriers to optimal care. Comparative studies across regions and socioeconomic groups could provide insights into disparities and inform policy interventions. Future research should also explore innovative models of care delivery, such as community-based rehabilitation, telehealth, and task-shifting to non-specialist providers, which have shown promise in other low- and middle-income countries.

CONCLUSION

This study examined a seemingly simple, yet intricate research landscape which covered epidemiology, patient-reported outcomes, rehabilitation interventions, outcome measure validation, and surgical management. The considerations constantly stressed that KOA is a significant public health burden especially among women, older adults, and individuals in physically taxing occupations. Obesity emerged as a most critical risk factor. While Nigerian research on KOA has provided valuable insights into prevalence, risk factors, patient experiences, and treatment strategies, the essential next line of actions would be; strengthening the clinical and surgical methodology, expanding multicentre collaborations, embedding culturally validated outcome measures into care pathways, and addressing psychosocial and health system scopes. If there is an alignment with global priorities and interventions are tailored to local contexts, future research will better inform evidence-based management and improve outcomes for patients with knee osteoarthritis in Nigeria.

DECLARATIONS

Ethics Approval and Consent to Participate: Not applicable. This study is a scoping review of published literature and did not involve human participants.

Consent for Publication: Not applicable.

Availability of Data and Materials: All data analyzed in this review are available in the published articles cited in the reference list.

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REFERENCES

American Academy of Orthopaedic Surgeons. (2022). *Surgical management of osteoarthritis of the knee: Clinical practice guideline.* American Academy of Orthopaedic Surgeons.

Adelowo, O. O., Chioma, E. H., & Ahmed, H. (2018). Correlates of radiographic changes in Nigerian patients with osteoarthritis of the knee. *Nigerian Journal of Medicine, 26*(3), 260–264. https://doi.org/10.4314/njm.v26i3

Adhama, A. I., Akindele, M. O., & Ibrahim, A. A. (2021). Effects of variable frequencies of kinesthesia, balance and agility exercise program in adults with knee osteoarthritis: Study protocol for a randomized controlled trial. *Trials, 22,* 470. https://doi.org/10.1186/s13063-021-05386-3

Afolabi, O. T., & Gureje, O. (2024). Depression and social support among elderly patients with chronic musculoskeletal disorders in Nigeria. *African Health Sciences.*

Aiyegbusi, A., Ishola, T., & Akinbo, S. (2019). Pain coping strategies with functional disability and quality of life in patients with knee osteoarthritis in Lagos, Nigeria. *Journal of Applied Sciences and Environmental Management, 22*(12), 1931–1936. https://doi.org/10.4314/jasem.v22i12.10

Akinpelu, A. O., Alonge, T. O., Adekanla, B. A., & Odole, A. C. (2009). Prevalence and pattern of symptomatic knee osteoarthritis in Nigeria: A community-based study. The Internet Journal of Allied Health Sciences and Practice, 7(3), Article 10. https://doi.org/10.46743/1540-580X/2009.1254

Akinpelu, A. O., Omosanya, O. J., Odole, A. C., Adegoke, B. O. A., & Oyewole, O. O. (2023). Cross-cultural adaptation and psychometric testing of the Yoruba Lequesne algofunctional index of knee osteoarthritis. *BMC Musculoskeletal Disorders, 24,* 897. https://doi.org/10.1186/s12891-023-07032-2

Akodu, A. K., Fapojuwo, O. A., & Quadri, A. A. (2017). Comparative effects of Pilates and isometric exercises on pain, functional disability and range of motion in patients with knee osteoarthritis. *Research Journal of Health Sciences, 5*(2), 94–103. https://doi.org/10.4314/rejhs.v5i2.8

Bannuru, R. R., Osani, M. C., Vaysbrot, E. E., Arden, N. K., Bennell, K., Bierma-Zeinstra, S. M. A., Kraus, V. B., Lohmander, L. S., Abbott, J. H., Bhandari, M., Blanco, F. J., Espinosa, R., Haugen, I. K., Lin, J., Mandl, L. A., Moilanen, E., Nakamura, N., Snyder-Mackler, L., Trojian, T., Underwood, M., … McAlindon, T. E. (2019). OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. *Osteoarthritis and Cartilage, 27*(11), 1578–1589. https://doi.org/10.1016/j.joca.2019.06.011

Bellamy, N., Buchanan, W. W., Goldsmith, C. H., Campbell, J., & Stitt, L. W. (1988). Validation study of WOMAC: A health status instrument for measuring clinically important patient-relevant outcomes in antirheumatic drug therapy. *The Journal of Rheumatology, 15*(12), 1833–1840.

Bija, M. D., Luma, H. N., Temfack, E., Gueleko, E. T., Kemta, F., & Ngandeu, M. (2015). Patterns of knee osteoarthritis in a hospital setting in sub-Saharan Africa. *Clinical Rheumatology, 34*(11), 1949–1953. https://doi.org/10.1007/s10067-014-2702-3

Fillingham, Y. A., Ramkumar, D. B., Jevsevar, D. S., Yates, A. J., Bini, S. A., Clarke, H. D., Schemitsch, E., Johnson, R. L., Memtsoudis, S. G., Sayeed, S. A., Sah, A. P., & Della Valle, C. J. (2018). Tranexamic acid use in total joint arthroplasty: The clinical practice guidelines endorsed by the American Association of Hip and Knee Surgeons, American Society of Regional Anesthesia and Pain Medicine, American Academy of Orthopaedic Surgeons, Hip Society, and Knee Society. *The Journal of Arthroplasty, 33*(10), 3065–3069. https://doi.org/10.1016/j.arth.2018.08.002

Fransen, M., McConnell, S., Harmer, A. R., Van der Esch, M., Simic, M., & Bennell, K. L. (2015). Exercise for osteoarthritis of the knee: A Cochrane systematic review. *Cochrane Database of Systematic Reviews, 1,* CD004376. https://doi.org/10.1002/14651858.CD004376.pub3

Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, L. A. (2022). PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis Campbell Systematic Reviews, 18, e1230. https://doi.org/10.1002/cl2.1230

Hunter, D. J., & Bierma-Zeinstra, S. (2019). Osteoarthritis. *The Lancet, 393*(10182), 1745–1759. https://doi.org/10.1016/S0140-6736(19)30417-9

Leifer, V. P., Katz, J. N., & Losina, E. (2022). The burden of OA-health services and economics. Osteoarthritis and cartilage, 30(1), 10–16. https://doi.org/10.1016/j.joca.2021.05.007

Li, E., Tan, J., Xu, K., Pan, Y., & Xu, P. (2024). Global burden and socioeconomic impact of knee osteoarthritis: A comprehensive analysis. *Frontiers in Medicine, 11,* 1323091. https://doi.org/10.3389/fmed.2024.1323091

Maitama, M. I., & Alabi, I. A. (2023). Preoperative percutaneous hamstring tenotomy in a patient with severe flexion deformity undergoing primary total knee replacement: Case report and literature review. *Annals of African Medicine, 22*(2), 231–234. https://doi.org/10.4103/aam.aam_237_21

Messier, S. P., Mihalko, S. L., Legault, C., Miller, G. D., Nicklas, B. J., DeVita, P., Beavers, D. P., Hunter, D. J., Lyles, M. F., Eckstein, F., Williamson, J. D., Carr, J. J., Guermazi, A., & Loeser, R. F. (2013). Effects of intensive diet and exercise on knee joint loads, inflammation, and clinical outcomes among overweight and obese adults with knee osteoarthritis: The IDEA randomized clinical trial. *JAMA, 310*(12), 1263–1273. https://doi.org/10.1001/jama.2013.277669

Nze, I. N., Ndukwu, C. U., Aronu, M. E., & Ugezu, A. I. (2021). Clinicoradiographic correlation between the WOMAC and Kellgren–Lawrence assessments among patients with knee osteoarthritis. *East and Central African Journal of Surgery, 27*(1), 25–29. https://doi.org/10.4314/ecajs.v27i1.4

Odole, A. C., & Akinpelu, A. O. (2008). Validity and internal consistency of a Hausa version of the Ibadan knee/hip osteoarthritis outcome measure. *Health and Quality of Life Outcomes, 6,* 86. https://doi.org/10.1186/1477-7525-6-86

Ogbu, V., Enweani, U., Madu, K., & Iyidobi, E. (2017). Prevalence and pattern of osteoarthritis of the knee at National Orthopaedic Hospital Enugu. *Nigerian Journal of Medicine, 25*(4), 336–340. https://doi.org/10.4314/njm.v25i4

Ogunbode, A. M., Adebusoye, L. A., Olowookere, O. O., & Alonge, T. O. (2014). Physical functionality and self-rated health status of adult patients with knee osteoarthritis presenting in a primary care clinic. *Ethiopian Journal of Health Sciences, 24*(4), 319–328. https://doi.org/10.4314/ejhs.v24i4.7

Ojoawo, A. O., & Akinwumi, O. M. (2018). Translation and validation of the reduced Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) from English to Yoruba. *African Journal of Physiotherapy and Rehabilitation Sciences, 8*(1–2), 47–53. https://doi.org/10.4314/ajprs.v8i1-2.8

Oyeyemi, A. L. (2014). Body mass index, pain and function in individuals with knee osteoarthritis. *Nigerian Medical Journal, 54*(4), 230–235. https://doi.org/10.4103/0300-1652.119610

Roos, E. M., & Lohmander, L. S. (2003). The Knee injury and Osteoarthritis Outcome Score (KOOS): From joint injury to osteoarthritis. *Health and Quality of Life Outcomes, 1,* 64. https://doi.org/10.1186/1477-7525-1-64

The Lancet Rheumatology. (2023). Global, regional, and national burden of osteoarthritis, 1990–2020 and projections to 2050. *The Lancet Rheumatology, 5*(8), e505–e515. https://doi.org/10.1016/S2665-9913(23)00163-7

Ugbeye, M. E., Alatishe, K. A., Olanrewaju, S. O., Lawal, W. O., Akpan, I. J., & Nwose, U. C. (2025). Intravenous tranexamic acid reduces blood loss and transfusion requirements in total knee replacement surgery: A double-blind controlled study in a regional hospital, Southwest Nigeria. *Nigerian Journal of Clinical Practice, 28*(5), 590–594. https://doi.org/10.4103/njcp.njcp_57_24

World Health Organization. (2023, July 14). *Osteoarthritis: Key facts and overview.* World Health Organization. https://www.who.int/news-room/fact-sheets/detail/osteoarthritis