

Effect of educational intervention on uptake of pain assessment tool among physiotherapists in Low- and Middle-Income Countries - A scoping review

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Abstract

Introduction: High-quality physiotherapy care depends on the regular use of standardised pain assessment instruments, but this remains a major challenge in Low- and Middle-Income Countries (LMICs). Educational interventions are a crucial tactic to increase adoption, yet their effectiveness in these settings is not well synthesised. The purpose of this scoping review is to synthesise existing studies on educational interventions on the use of pain assessment instruments among physiotherapists in LMIC to enhance patient care.

Methods: The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. A systematic search of four electronic databases was performed for studies published between 2015 and May 2025. Twelve studies from LMIC, primarily in Sub-Saharan Africa, met the inclusion criteria.

Synthesis: The review suggests that physiotherapists' knowledge, confidence, and frequency of tool usage improved in the short term because of educational interventions, such as workshops, training courses, and tool-validation projects. Improved test scores and more use of instruments like the Brief Pain Inventory (BPI) were important results. Significant obstacles, such as heavy clinical workloads, time constraints, a lack of resources, and the cultural inadequacy of many of the technologies now in use, prevented widespread adoption. There was little information on long-term practice change in the evidence base, which was mostly composed of short-term trials.

Conclusion: Although educational initiatives can increase physiotherapists in LMIC short-term adoption of pain assessment techniques, removing systemic impediments is necessary for their long-term effectiveness. To encourage consistent evidence-based practice, future programs should incorporate ongoing mentoring and create culturally appropriate resources.

Keywords: Educational Intervention, Effect, LMIC, Pain Assessment, Physiotherapists

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Introduction

Physiotherapy is a branch of the healthcare profession that focuses on restoring function and improving the quality of life of individuals. This involves evaluating the individual before administering the necessary intervention.

Physiotherapists assess patients' pain levels, joint range of motion, and muscle strength to guide the selection of appropriate interventions and promote recovery (1, 2).

Patient-centred care is central to physiotherapy practice, especially for individuals with chronic conditions (2). Goal-setting fosters patient engagement in treatment planning, enhancing adherence, motivation, and satisfaction, which lead to improved outcomes. Effective documentation underpins quality healthcare, and the use of standardised patient assessment tools ensures consistent record-keeping,

progress tracking, and communication among healthcare providers (3).

These assessment tools provide a structured framework for physiotherapists to evaluate patient conditions, monitor progress and adjust treatment plans; accordingly, ultimately enhancing patient outcomes and ensuring the highest quality of care (3). Despite the critical role these tools play in promoting efficient, evidence-based practice, their adoption and consistent use remain a challenge in many settings, particularly in Low- and Middle-Income Countries (LMIC) (4).

Physiotherapists in LMIC are expected to handle high patient loads, often in under-resourced environments and inadequate infrastructure, which can reduce the time available for thorough documentation (5, 6). The inconsistent adoption of these tools can be attributed to several factors, which include barriers and facilitators such as physical therapists' competence, knowledge of the tools and resistance to behavioural change: organisation policy, patients' feedback and feasibility of measuring tools. To address these challenges, strategies such as simplifying tools, developing educational modules and promoting self-analysis were implemented, which improved therapists' knowledge, behaviour, and attitudes towards these tools (7). Also, barriers like a lack of time, resources, and familiarity with the tools hinder their widespread adoption. Tailored strategies, including educational programs and integration into clinical reasoning, are essential to improve their use in practice (8, 9). The use of self-reported pain assessment tools is integral to evaluating patients' conditions, identifying individual health challenges, and optimising treatment outcomes. Therefore, this scoping review seeks to synthesise existing evidence on educational interventions that facilitate the use of these tools among physiotherapists in low- and middle-income countries.

Objective of the Study

The main objective of this study is to determine the effect of educational intervention on uptake of the pain assessment tool among physiotherapists in LMIC.

Research Objectives

The study seeks to answer the following specific objectives:
To determine the existing educational interventions aimed at increasing the use of pain assessment tools among physiotherapists in LMIC

To evaluate the reported outcomes of educational interventions used to enhance physiotherapists' knowledge and practices regarding the use of pain assessment tools in LMIC

To assess the barriers to the sustained use of pain assessment tools in LMIC

Research Questions

The study seeks to answer the following specific research questions:

What are the existing educational interventions aimed at increasing the use of pain assessment tools in LMIC?

What are the reported outcomes of educational interventions used to enhance physiotherapists' knowledge and practices regarding the use of pain assessment tools in LMIC?

What are the barriers to the sustained use of pain assessment tools in LMIC?

Methods

Study design

This scoping review was guided by Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for scoping reviews (PRISMA-ScR) 2020 standards guideline.

Eligibility criteria

This review includes articles (both quantitative and qualitative studies) that evaluated the impact of educational interventions on the uptake of pain assessment tools among physiotherapists. Only articles published in the English language were reviewed. Review excluded studies focusing on healthcare professionals other than physiotherapists (Table 1).

Table 1: Eligibility criteria

Criterion	Inclusion	Exclusion
Population	Physiotherapists working in various settings	Other health care provider
Intervention	Educational training on the uptake of pain assessment tools	Non-educational intervention
Context	Health service engagement, patient-oriented	Non-health service engagement, non-patient oriented
Outcome	Improvement in the uptake of pain assessment tools	
Study design	Quantitative, qualitative, mixed method,	Systematic reviews, psychometric reviews
Language	Only English	Any other language
Geographic	LMIC	None
Period	2015- May 2025	Studies published earlier than 10 years

Information sources

This review protocol follows the PRISMA guidelines: Studies were screened by reading through the titles, abstract review and full text review. The information extracted includes factors influencing uptake, methods of intervention description and efficacy of the result. The search was restricted to English-language published papers from 2015 to the present.

Search strategy

A comprehensive search was conducted using the following electronic databases: PubMed, Scopus, Science Direct and Google Scholar. The search covered the period from January 2015 to May 2025 to capture the factors and most recent

developments in outcome measures or assessment tools for physiotherapists. Search items include the use of keywords together with the effective use of Boolean operators such as “AND” “OR” “NOT” to narrow down specific and relevant studies for this review. Search queries also included assessment tools, measuring instruments, outcome measures, self-reported assessment tools, and evidence-based practice using assessment tools or outcome measures. Author and title search conducted for all studies, continuously rerun to update the findings. The search queries across databases are displayed in Table 2, while the search logs and results retrieved are shown in Table 3. The number of articles retrieved is displayed in Figure 1.

Table 2: Search Query across databases

Database	Search Query String
SCOPUS	TITLE-ABS-KEY ((impact OR effect) AND ("intervention" OR "training*") AND ("pain assessment" OR "pain tool*") AND (physiotherapist* OR "physical therapist*")) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (LMIC)
PUBMED	((((((((((((impact) OR (effect)) AND ("training program")) OR ("educational intervention")) AND ("pain assessment"[MeSH Terms])) OR ("pain measurement"[MeSH Terms])) OR ("patient-reported pain"[MeSH Terms])) AND (physiotherapist*)) OR ("physical therapist")) AND (Nigeria)) AND ((y_10[Filter]) AND (exclude preprints[Filter]) AND (ffi[Filter]) AND (english[Filter])))
SCIENCE DIRECT	(Effect OR impact) AND ("educational intervention" OR "training program") AND ("pain assessment" OR "patient-reported pain") AND (physiotherapist OR "physical therapist") AND (LMIC)AND (pub-date > 2015)
GOOGLE SCHOLAR	intitle: impact OR effect AND "educational intervention" AND "pain assessment" AND physiotherapist AND LMIC

Table 3: Search logs and results retrieved

Database	Search Date	Filters Applied	Number of Results Retrieved
Scopus	26-04-2025	English, 2015- present	85
PubMed	02-05-2025	English, 2015-present	71
ScienceDirect	02-05-2025	English, 2015-present	36
Google Scholar	03-05-2025	English, 2015-present	101
TOTAL			293

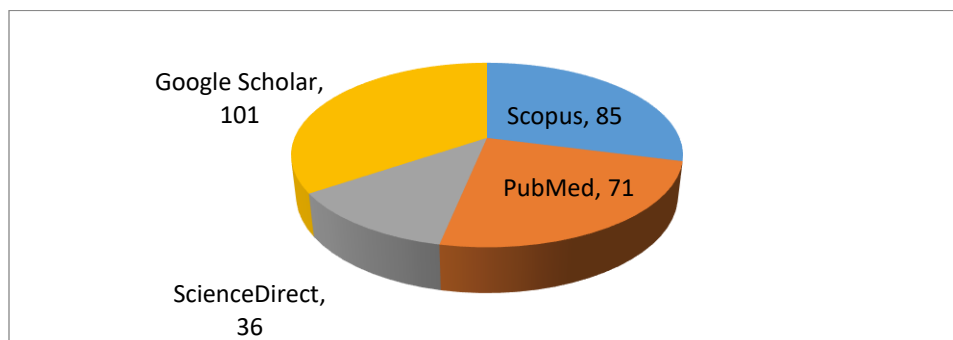


Figure 1: Pie chart showing the number of results retrieved

Study Selection

The studies retrieved from the initial database search were reviewed thoroughly using their abstracts for relevance to the study objectives. Next, the included studies were then sought for full text and examined for correspondence with the

inclusion criteria. These studies included randomised controlled trials (RCTs), quasi-experimental studies, and observational cohort studies that examined the effect of educational interventions on physiotherapists' use of pain assessment tools.

Data charting process

A Zotero library was created where all the studies obtained from searching the databases were exported. The record was imported into reference management software Zotero to organise citations. The studies were also imported into the Rayyan AI to assist in the screening phase. Duplicates are automatically identified and removed using the software’s deduplication function, followed by a manual check to ensure accuracy. The title was screened from databases guided by the eligibility criteria. Titles and abstracts were also reviewed independently based on the inclusion and exclusion criteria. The full text of the selected article was continuously reviewed until the final selection of appropriate articles. These studies include quasi-experimental studies, cross-sectional and observational cohort studies that examine the use of pain assessment tools among physiotherapists.

Critical appraisal of sources of evidence

The Mixed Methods Appraisal Tool (MMAT) 2018 version was used to critically appraise the included primary studies in line with (10). Two reviewers independently performed the quality assessment, and differences were resolved through unanimous consensus. MMAT was adopted to

provide an overview of the methodological quality of the included studies.

Data extraction

A data extraction form was designed, which was used to obtain the necessary information from each selected study. The required information includes study design, authors, region, key intervention or initiative, findings or outcome, and challenges or barriers.

Data Analysis

Narrative synthesis analysis was used to analyse the findings from the included articles. The study context was the uptake of the pain assessment tool among physiotherapists in LMIC. We defined a pain assessment tool as of self-reported tool enabling patients to describe their level of pain. The results were presented in tabular form and described.

Synthesis

Out of the total of 293 articles retrieved from the databases, 139 were excluded for reasons including duplication, lack of relevance, unavailability of full texts and studies in LMIC but not among physiotherapists (Figure 2). The characteristics of the included studies are presented in Table 4.

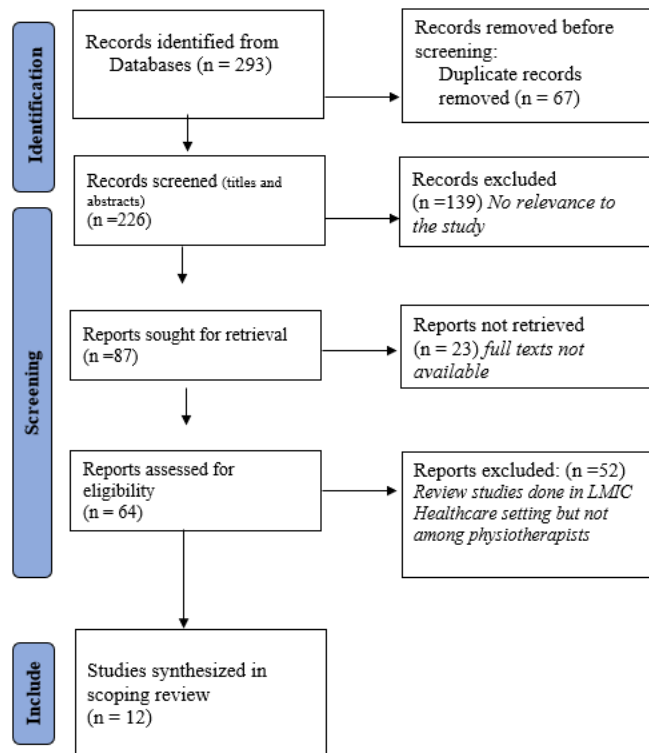


Figure 2: Prisma-ScR flow diagram 2020

Table 4: Extraction of Data from the included studies

Author & Year	Study Design	Region	Key Initiative	Outcomes	Challenges
Ampiah et al (2024) (11)	Mixed-method Quasi-experimental design	Ghana	Biopsychosocial Education Program (BPS)	High feasibility (90% retention, 83% protocol adherence). Improved use of patient-reported outcome measures for pain intensity, catastrophizing, and other psychosocial factors	Patient adherence to therapy in education and keeping track of patients' at-home workout regimens.
Morriss & Roques (2018) (12)	Cross-sectional study	LMIC	EPM Program, Multidisciplinary workshops & online courses	Increased use of standardised assessment tools and multimodal analgesia. Promotes the "Recognise, Assess, Treat" framework. Early handover to local instructors facilitates sustainability	Political Instability, Resistance to transitioning from client list to programmatic policies
Da Silva et al (2018) (13)	Instrument Validation Study	South Africa	The creation of a valid, reliable tool and education initiative.	Developed the TVPDS, a viable and reliable technique that has a significant correlation ($r=0.729$) with the VAS. Demonstrates the need for language and cultural adaptation to provide an appropriate judgment.	VAS and other standardised measures could miss subtle cultural differences in pain feelings. Cultural adaptation is a time-consuming and resource-intensive process.
Sawadogo (2024) (14)	Cross-sectional Survey	Francophone Africa	Education program on the assessment of current practice	The percentage of physiotherapists who systematically employed standardised outcome measures was just 27%. Identified key barriers to tool use.	Major challenges include a lack of time, the unavailability of tools, cultural insensitivity of existing tools, and non-adherence to training
Da Silva Ranzatto et al. (2024) (15)	Cross-sectional study	Brazil	Health Information and Assessment of Knowledge	Of physiotherapists, only 32.6% were able to identify pain measuring scales accurately. The favoured method among experienced clinicians was NPRS.	Regarding the function and use of various pain scales, practitioners have serious knowledge gaps.
Nkhoma et al (2023) (16)	Quasi-experimental study	Malawi	Educational intervention for healthcare workers on pain assessment	They used the Brief Pain Inventory (BPI) as a primary outcome. Intervention improved knowledge and frequency of pain assessment	Time for a thorough evaluation is limited by a heavy workload and a lack of employees. depends on one-time instruction rather than ongoing mentoring
Naidoo (2022) (17)	Methodological study	South Africa	Development of clinical education evaluation tool (VN-CPET)	The tool includes competencies for patient assessment, although it is not exclusively focused on pain. Highlights the importance of evaluating training quality.	Challenges in the training time not being sufficient, and creating a tool that is comprehensive yet practical for routine use in diverse clinical settings.

Kiyange et al (2024) (18)	Cross-sectional study	Malawi	Interdisciplinary health training	Significant progress was made by 92% of institutions across all 11 metrics. In particular, there were significant increases in the number of patients getting or being evaluated for palliative care, a 69% rise in the number of specialised palliative care rooms/clinics, and a total of 253 staff members trained across all institutions (a 220% increase in the region).	Insufficient training time
Myezwa et al (2025) (19)	A pre and Post study	Sub-Saharan Africa	Physiotherapy training program for physiotherapy students	Students' grasp of their duty as advocates, the resources available to them, and their ability to articulate the difficulties that patients experience all improved.	Shortage of resources challenges
Saracoglu et al (2023) (20)	Cross-sectional study	South Africa	Pain Neuroscience education (PNE)	PNE increased undergraduate physiotherapy students' understanding of pain and influenced their attitudes and beliefs about persistent low back pain.	Limited time for training
Siddiqui et al (2023) (21)	Cross-sectional study	Pakistan	An educational course intervention	The clinical expertise and understanding of pain evaluation in CIPs were positively impacted by the collaborating physiotherapists. Compared to those from non-metropolitan cities, the individuals from hospitals in metropolitan areas showed a notable improvement.	Limited training sessions in the use of objective pain assessment tools like BPS and CPOT
Tunpattu et al (2018) (22)	Quantitative study	Sri-Lanka	A two-day educational program combining short didactic sessions	According to self-assessments conducted before and after training, overall trust in common critical care physiotherapy abilities increased from 11.6% to 59.2%. Compared to pre-course scores (mean score = 36.6; percentage of passes = 12.5%), post-course MCQ scores (mean score = 63.2) and pass percentage (87.5%) were higher.	Insufficient training resources. This program should be done regularly

The critical appraisal of included studies using MMAT is presented in Table 5. The MMAT appraisal of the included studies' methodological quality generally ranged between moderate and high. Most studies demonstrated sufficient rigour in design, sampling, and reporting by meeting at least four of the five MMAT criteria.

Table 5: MMAT Summary of Included Studies

Author & Year	Study Design	MMAT Category	Number of Criteria Met (5)	Appraisal
Ampiah et al (2024)	Mixed-Method Quasi-experimental	Mixed Methods	4/5	Moderately High
Morriss & Roques (2018)	Cross-sectional	Quantitative Descriptive	4/5	Moderately High
Da Silva et al (2018)	Instrument Validation	Quantitative Descriptive	5/5	High
Sawadogo (2024)	Cross-sectional	Quantitative Descriptive	4/5	Moderately High
Ranzatto et al. (2024)	Cross-sectional	Quantitative Descriptive	3/5	Moderate
Nkhoma et al (2023)	Quasi-experimental	Quantitative non-randomized	4/5	Moderately High
Naidoo (2022)	Methodological study	Quantitative Descriptive	5/5	High
Kiyange et al (2024)	Cross-sectional study	Quantitative Descriptive	4/5	Moderately High
Myezwa et al (2025)	Pre-and-Post-Post-intervention	Quantitative non-randomized	3/5	Moderate
Saracoglu et al (2023)	Cross-sectional study	Quantitative Descriptive	3/5	Moderate
Siddiqui et al (2023)	Cross-sectional study	Quantitative Descriptive	3/5	Moderate
Tunpattu et al (2018)	Quantitative pre-post	Quantitative non-randomized	4/5	Moderately high

Study Characteristics

The included studies varied in design, sample size, and geographical distribution. This review includes only research from low- and middle-income countries (LMIC), with a clear prevalence of studies from Sub-Saharan Africa. Eight of the twelve investigations took place in this region, including contributions from Ghana, Malawi, South Africa, and a multi-country survey in Francophone Africa. This specialisation emphasises the rising acknowledgement in Sub-Saharan Africa of the value of educational interventions, training programs, and tool development in improving pain

assessment procedures. Outside of Africa, two investigations were done in South Asia, notably in Pakistan and Sri Lanka, while Latin America was represented by a single research project from Brazil. One further research used a multi-country approach, looking at pain assessment education programs in LMIC more broadly. Taken together, this distribution demonstrates both African nations' considerable participation in this area of research and the relative underrepresentation of areas such as Latin America and Asia, implying that the evidence base is unevenly spread throughout the LMIC landscape (Figure 3).

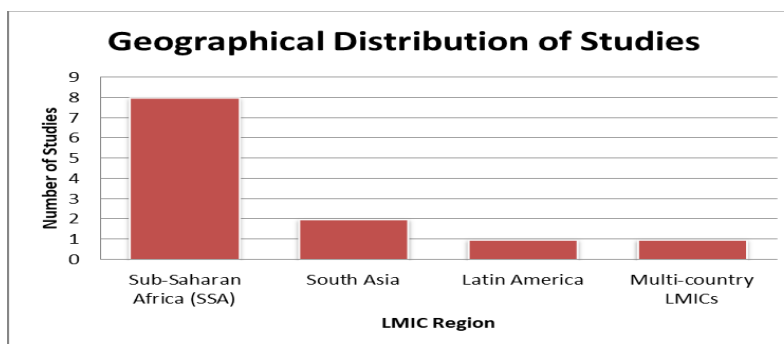


Figure 3: Bar chart showing the geographical distribution of studies across LMIC regions

In terms of study design, most of the included research used observational and descriptive methodologies, notably cross-sectional surveys. Six studies used cross-sectional methods to collect knowledge, behaviours, and attitudes about pain assessment, reflecting the field's present focus on mapping existing capacities and finding gaps rather than evaluating solutions under controlled conditions. Also, three of the studies used quasi-experimental and pre-post designs, which provided insights into the immediate benefits of educational programs but provided minimal data on long-term practice

changes. Two studies used methodological or instrument development techniques to validate novel pain assessment instruments and examine the efficacy of clinical education frameworks. Only one study conducted a direct quantitative pre-post evaluation of a brief training course.

Existing educational interventions aimed at increasing the use of pain assessment tools among physiotherapists

Throughout the included studies, a range of educational interventions were found, all of which were intended to

improve physiotherapists' proficiency with and understanding of pain assessment instruments in LMIC. Most projects were set up as specialised training programs, seminars, or short courses. For instance, da Silva et al demonstrated that training in Malawi enhanced both knowledge and the frequency of pain assessments using the Brief Pain Inventory (15), and Ampiah et al revealed that a Biopsychosocial Education Program in Ghana aimed at improving the use of patient-reported outcome measures (11). Similarly, in South Africa, Pain Neuroscience Education for physiotherapy students, which was aimed at increasing the knowledge and attitudes regarding chronic pain (19) and in Sri Lanka, a two-day intensive program dramatically improved post-course test performance (21). More extensive initiatives, like the one by Morriss et al, detailed, integrated online instruction and workshops in several LMIC, highlighting sustainability by transferring control to local teachers early on (12).

Some interventions included tool creation and validation as educational opportunities in addition to direct teaching. While Nkhoma et al proposed the VN-CPET to measure clinical education abilities (16), da Silva et al developed the TVPDS in South Africa (13), emphasising the significance of cultural adaptation in pain assessment. These studies show

how education has been utilised to guarantee that assessment tools are contextually appropriate and to reinforce tool usage.

Reported outcomes of educational interventions

The reported outcomes of educational intervention used to enhance physiotherapists' knowledge and practices regarding the use of pain assessment tools are displayed in Figure 4. Following educational interventions, the assessed studies consistently indicated favourable short-term results. Training produced quantifiable gains in knowledge, confidence, and test performance in a variety of circumstances. Morriss et al reported increased awareness and application of patient-reported outcome measures in Ghana following biopsychosocial education (12). While Tunpattu et al noted notable improvements in post-training test scores among Sri-Lankan physiotherapists after a two-day intensive education program (22), Saracoglu demonstrated that pain neuroscience education improved student physiotherapists' attitudes toward patients with persistent pain. On the other hand, Nkhoma et al reported that workshops in Malawi improved physiotherapists' ability to incorporate standardised tools like the Brief Pain Inventory into their practice (16).

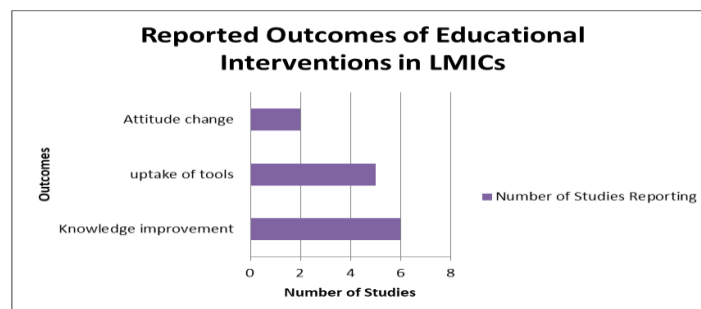


Figure 4: A chart showing Reported Outcomes of Educational Interventions among physiotherapists in LMIC

The reviewed studies showed that improved usage and validation of certain evaluation tools, in addition to knowledge, increases. The relationship between contextual relevance and clinical adoption was highlighted by Sawadogo et al, who showed that culturally adapted instruments were easier to understand and use in South Africa when offered through educational activities (14). Kiyange et al went on to emphasise that organised assessment frameworks, like the VN-CPET, strengthened the methodical use of clinical assessment measures while also improving the evaluation of student competencies (18). In the meantime, another study revealed multi-country programs that showed persistent increases in practice when training was coupled with local instructor engagement and mentorship, indicating that institutional support enhances education's long-term results (13). The result suggests that educational interventions can greatly enhance understanding

and early acceptance of assessment techniques among physiotherapists.

Barriers to the sustained use of pain assessment tools

From the reviewed studies, several barriers were repeatedly noted in the evaluated research as restricting the long-term usage of pain assessment tools in LMIC (Figure 5). A major barrier was the lack of time and excessive clinical workload, which made it difficult for physiotherapists and other healthcare workers to conduct full assessments (15, 16). This was exacerbated by a lack of personnel and resources, which limited both the availability of standardised instruments and the practicality of incorporating them into ordinary clinical practice (19, 20). In many situations, training efforts were frequently offered as one-time sessions, with minimal follow-up mentoring or reinforcement, resulting in diminishing long-term benefit (16, 22).

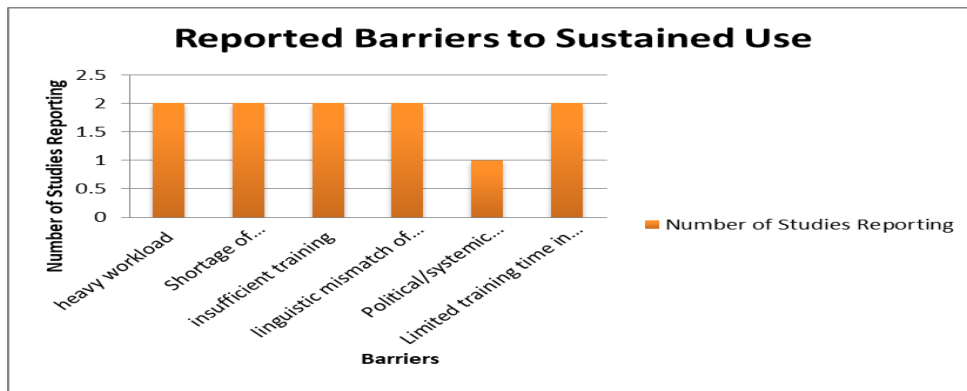


Figure 5: A chart showing reported barriers to sustained use among physiotherapists in LMIC

Another barrier identified was the cultural and contextual mismatch of current technologies, which were frequently designed in high-income countries and were not tailored to local languages or patient needs. For instance, da Silva et al stated that traditional pain measures such as the VAS may ignore culturally distinct presentations of pain (13), whereas Sawadogo et al stressed that cultural insensitivity limited physiotherapist uptake (14). Structural concerns arose as well, such as political instability, which affected program continuity (12), and a lack of time allotted to training within the curriculum, which hampered skill development.

Discussion

A variety of educational initiatives aimed at improving physiotherapists' utilisation of pain assessment instruments in LMIC were found in this review. The results show that most of the research was carried out in settings with limited resources and in which mechanisms for ongoing professional development are still in their infancy. Despite being mostly short-term, the reported results of these educational interventions were generally good. Since most of the examined research used quasi-experimental or pre-post designs without control groups, the evidence for their efficacy is just moderate. Following training, physiotherapists showed increased confidence, improved test scores, and more consistent use of patient-reported outcome measures, according to studies that documented notable gains in knowledge and skills (11, 16, 22). As demonstrated by Saracoglu et al (20), where students' opinions of patients with chronic pain changed, there were also noticeable changes in attitude. The consistency of positive results across diverse contexts suggests that structured educational exposure enhances physiotherapists' readiness to adopt standardised tools, and this finding is consistent with other studies (23, 24) with controlled assessments of comparable training programs in LMIC health systems, which demonstrate consistent increases in clinician competence and self-efficacy after brief educational interventions. These results imply that although the breadth and manner of treatments vary, their fundamental design converges on workable, resource-sensitive tactics appropriate for LMIC settings. The strength of evidence in this case is therefore moderate but convergent, implying that numerous studies in

the same direction, even though none use high-level randomised trials. The difficulties in converting short-term knowledge gains into long-term clinical practices were highlighted by the fact that fewer studies reported long-term results and that sustained practice change was less obvious where follow-up data were available.

Despite these successful outcomes, barriers to the continued use of pain assessment instruments were often noted. Standardised evaluations were not consistently applied by clinicians due to time restrictions and severe workloads (14, 16), and integration into normal treatment was further constrained by a lack of personnel and material resources (14, 19, 20). Standardised tools' language and cultural mismatch was also cited as a barrier (13, 14), pointing out that instruments created in high-income environments frequently fell short of capturing regional expressions of pain. The evidence for these obstacles is strong, since they were consistently recognised across almost all included research, frequently triangulated with qualitative interviews. These results are consistent with broader evaluations of the application of evidence-based practice in allied health, which also point to time constraints, a lack of resources, and culturally inappropriate tools as the main obstacles in LMIC settings (25, 26, 27). These difficulties were made worse by structural problems such as political unpredictability (12) and insufficient training time in professional curricula (17, 20), and this aligns with the findings (28, 29). This convergence of evidence emphasises that, while educational interventions can spark change at the individual level, systemic and structural facilitators are required for sustainability. Also, although educational interventions can produce short-term gains, systemic and contextual constraints that prevent persistent usage compromise their long-term efficacy.

This analysis methodically maps the data on treatments specifically targeted at enhancing physiotherapists' use of standardised assessment within resource-constrained situations, in contrast to previous studies that mostly concentrated on high-income settings or general pain education. It draws attention to contextual hurdles that were frequently overlooked in previous assessments, such as a lack of institutional support, training continuity, and cultural adaptation, in addition to the effectiveness of the intervention. To provide an evidence base for localised

implementation and scaling, this review places educational strategies within the systemic and infrastructure realities of LMIC healthcare systems, thereby advancing knowledge. Also, this review indicates that a multi-level integration route is necessary to support policy acceptance in LMIC. Ministries of Health and professional regulatory councils should institutionalise Continuing Professional Development (CPD) as a mandatory component of physiotherapy licensure and certification processes, allowing each institution to design programmes that reflect its unique practice demands. Policymakers should require that clinical guidelines and electronic health records incorporate culturally appropriate evaluation instruments at the health system level.

Limitations of this study

This scoping review took into consideration the most published articles. Search terms and the data extraction plan were refined as the literature emerged. The search included articles from self-reported data, which may introduce response bias. The search conducted involved Google Scholar as one of the databases, and this is considered a supplementary source. The study focuses mainly on healthcare providers providing physiotherapy services only.

Conclusion

The research provided strong empirical information on how a structured educational initiative can influence clinical practice among physiotherapists in a real-world setting. The findings of the study, drawn from the body of evidence, indicate a moderate strength and reveal significant and positive outcomes of intervention in all settings of clinical practice. The results show a recurring pattern that educational interventions in LMIC successfully enhance the knowledge, abilities, and short-term practices of physiotherapists; however, maintaining these improvements mostly depends on resolving more extensive systemic barriers. The results emphasise the significance of switching from workshop-based, short-term instruction to system-anchored, policy-driven tactics that formalise evidence-based practices. The suggested policy approaches highlight how curriculum redesign, regulatory changes, and intersectoral cooperation may help LMIC health systems convert educational benefits into long-lasting clinical effects. In addition to enhancing physiotherapists' skills, strengthening these frameworks will support fair, superior pain treatment and patient care in environments with limited resources.

Recommendations

Peer mentorship, supervisory support, and refresher courses should be used in place of or in addition to one-time seminars. Instead of going back to their previous routines when training is over, this will enable physiotherapists in LMIC to solidify their abilities and the regular use of pain assessment tools in their daily clinical practice.

Apart from being simplified or digitalised for convenience in hectic clinical settings, pain assessment tools should be culturally and linguistically appropriate. This implies that in practice, physiotherapists have access to techniques that are not only legitimate but also useful and pertinent to their context, which boosts their confidence and adherence in real-world situations.

Abbreviations

BPI: Brief Pain Inventory
BPS: Biopsychosocial Education Program (BPS)
LMIC: Low- and Middle-Income Countries
MMAT: Mixed Methods Appraisal Tool
PRISMA-ScR: Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews
RCT: Randomised Control Trial

Declarations

Ethics Approval: Not relevant

Data Availability: No primary data were generated or analysed in this study. All data supporting the findings of this scoping review are available in the published literature cited within the article.

Competing Interests: Nil.

Funding sources: Nil.

Author contributions: AOM drafted the initial version of the manuscript. LSA conceptualised the study and provided critical revisions of the draft. AAA performed the final review, incorporated corrections, and approved the version for submission. All authors read and approved the final manuscript.

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