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The EBP Dilemma: Why Physiotherapists Struggle to Integrate Research into Clinical Practice

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Abstract:

Background: *Evidence-based practice (EBP) has become fundamental in contemporary healthcare, focusing on integrating the best available evidence, clinical expertise, and patient values to guide clinical decisions. This approach seeks to enhance patient outcomes by ensuring physiotherapy interventions are based on scientific research, customized to individual needs, and aligned with patient preferences.*

Purpose: *To promote the integration of evidence based principles into physiotherapy practice, fostering a culture of critical thinking, continuous learning and patient-centered care, while also identifying the barriers that physiotherapists encounter when attempting to integrate EBP into their practice.*

Methodology: *Literature search was conducted on PubMed using EBP, physiotherapy, clinical practice, implementation, barriers. 34 articles were found, out of which articles published in English language were studied in order to find out the effectiveness of EBP in clinical practice and the challenges being faced in the implementation of EBP in physiotherapy. The study included randomized controlled trials published in the last five years, available in full text, and written in English. The studies specifically focused on physiotherapists.*

Results: *Between 2020 and 2025, 14 free-full text English articles were published. The titles and abstracts of these articles were screened, following that 8 articles were excluded. In the end, 6 studies were included in the current review.*

Conclusion: *Physiotherapists globally acknowledge EBP as vital for advancing the profession. However, its integration faces challenges, including time constraints, limited research access, and insufficient training and mentorship. Organizational and systemic barriers further hinder implementation.*

While leadership support and educational initiatives act as enablers, overall progress remains constrained. The review emphasized the need for high-quality research to address existing gaps and foster effective EBP adoption in clinical physiotherapy profession.

Keywords: *Clinical decision-making, Evidence-based practice, Patient values, Physiotherapy, Research evidence*

INTRODUCTION

Evidence-based practice (EBP) is a dynamic synergy of clinical proficiency, values of the patient, and the highest quality research, guiding the selection procedure for optimal patient care. It is a globally recognized movement determined as the "conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" [1]. EBP has grown progressively important in numerous areas

of clinical work, particularly in physiotherapy [2]. The concept of EBP has indeed evolved over time, and Herbert and colleagues have contributed to delineating how the principles (finest available evidence, clinical skills, and patient preferences and values) can be applied specifically within physical therapy [3].

EBP has its roots in the early 1990s, primarily within the field of medicine, as an organized strategy to clinical judgement that combines the optimal research evidence with medical skills and patient value [1]. The appellation "evidence-based medicine" was popularized by the "Evidence-Based Medicine Working Group", which aimed to improve healthcare quality by promoting the use of systematic reviews and clinical guidelines derived from rigorous research [4]. This movement was a response to the growing recognition that clinical decisions were often based on tradition, anecdote, or expert opinion rather than solid evidence, leading to variability in care and suboptimal patient outcomes [1]. The early 2000s saw a significant expansion of EBP beyond medicine into other healthcare disciplines, particularly nursing. This shift was driven by the recognition that nursing staff play an important role in patient care and that their practice should be informed by the empirically supported evidence. Melnyk and Fineout-Overholt (2015) highlighted that using EBP in nursing not only results in better patient results but also boosts the overall quality of care and promotes a culture of inquiry among nursing professionals.

In addition to nursing, EBP has found applications in fields such as community service, education, and public health. For instance, in social service, EBP encourages practitioners to utilize research findings to inform interventions and policy decisions, thereby improving service delivery and client outcomes [5]. In education, EBP has resulted in the development of evidence-based teaching practices that enhance student learning and engagement [6].

The establishment of organizations such as the Cochrane Collaboration and the Joanna Briggs Institute has been instrumental in promoting EBP by providing access to premium systematic literature reviews and evidence synthesis [7]. These organizations have also contributed to the development of training program and resources aimed at enhancing the skills of practitioners in critically appraising and applying research evidence.

Recently, technology integration has enhanced EBP implementation. Electronic health records (EHRs) and clinical decision support systems (CDSS) facilitate evidence-based decision-making by providing access to relevant research at the point of care [8]. The use of mobile health applications and telemedicine has also expanded the reach of EBP, allowing practitioners to stay updated regarding the recent evidence and standards regardless of their location. In spite of the advancements achieved, obstacles remain in the broad implementation of EBP which hinder its implementation in clinical setting [9]. To address these challenges healthcare organizations are increasingly focusing on creating a culture that supports EBP through leadership commitment, ongoing education, and the provision of resources that facilitate access to evidence. EBP has transformed healthcare by promoting a systematic, evidence-based approach on patient outcomes. As the demand for effective care grows, EBP principles will remain essential for clinical decision-making across disciplines.

Sackett et al. (1996) developed 5-step model of EBP. The model consists of questioning, obtaining the strongest evidence, evaluating the evidence, implementing the results in healthcare settings, and assessing the outcomes. The impact of this model has led to its integration and adjustments across healthcare. Historically, the core principles of EBP have emphasized formulating clinical questions, procuring the relevant literature, and evaluating the evidence but have struggled to incorporate evidence being translated into practice [10].

Formulating a strong and clear clinical question is the first step in the research process. The PICOT framework helps structure these questions, ultimately allowing for focused research that aligns with medical databases. PICOT stands for Patient, Intervention, Comparison, Outcome, and Time. This step is foundational, guiding practitioners toward informed decisions. Elizabeth Connor recommends a method for starting to cultivate the practice of investing the formulation of question: "Take a small problem that vexes

you or your work colleagues and rework it into a critical question. Use this approach to develop the habits of mind that make questioning and searching the literature second nature" [11].

The second step of EBP is to find information or evidence to answer the formulated question. Search relevant databases such as PubMed, CINAHL, and Cochrane Library for studies, articles, and reviews related to the clinical question. To refine the search and find the most relevant studies, use appropriate keywords and Boolean operators. This step depends on the well-structured question to pinpoint the primary issue and any pertinent context that will be necessary to formulate a potent search methodology [11].

Critically appraising the evidence is the 3rd step. This includes assessing the quality of the studies, relevance and consistency of the findings. Evaluate the quality of the studies using tools like "Critical Appraisal Skills Programme" (CASP), "Joanna Briggs Institute" (JBI) critical appraisal tool, GRADE ("Grading of Recommendations Assessment, Development and Evaluation") framework, "Oxford Centre for Evidence-Based Medicine" (OCEBM), and "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) [12].

The fourth step is to apply the evidence or findings to clinical practice. It comprises combining the most reliable evidence with clinical skills and patient choices to formulate knowledgeable decisions regarding patient care. Collaborative decision-making is essential, ensuring that the chosen intervention aligns with both the evidence and the patient's needs [1]. Effective implementation and clear communication of the treatment plan to the patient and healthcare team are critical for successful outcomes [12].

The fifth step entails the evaluation of the outcomes associated with the implemented intervention to determine its efficacy and influence on patient health. The evaluation process involves measuring clinical indicators and patient satisfaction to determine if the intended outcomes have been achieved [13]. By juxtaposing the actual results against the anticipated outcomes, it becomes possible to identify discrepancies, thereby pinpointing areas necessitating improvement [12]. Reflecting on these results informs future clinical practices by highlighting successful and less effective elements [1]. Additionally, documenting the evaluation process contributes to the broader body of knowledge in EBP and fosters ongoing quality improvement within clinical settings [14]. Disseminating these findings among colleagues promotes an environment that fosters continual knowledge acquisition and enhances the comprehensive quality of care provided [9].

EBP represents an ascendant and expanding paradigm within rehabilitation and physiotherapy practices. Despite its growing global application, a universally accepted and precise definition remains elusive amongst clinicians and researchers [15].

"The World Confederation for Physical Therapy" (European Region) delineate EBP as "a commitment to use the best available evidence to inform decision-making about the care of individuals that involves integrating physiotherapist practitioners and individual professional judgement with evidence gained through systematic research". Despite the evident advantages of EBP, its adoption within physiotherapy and other healthcare domains has been sporadic and disparate in quality [16]. Studies have identified numerous challenges faced by physiotherapists in the execution of empirically validated practice. This review targets to consolidate research findings on impediments to and supporters of EBP to aid in identifying methods to enhance the consistency and quality of EBP implementation.

METHODOLOGY

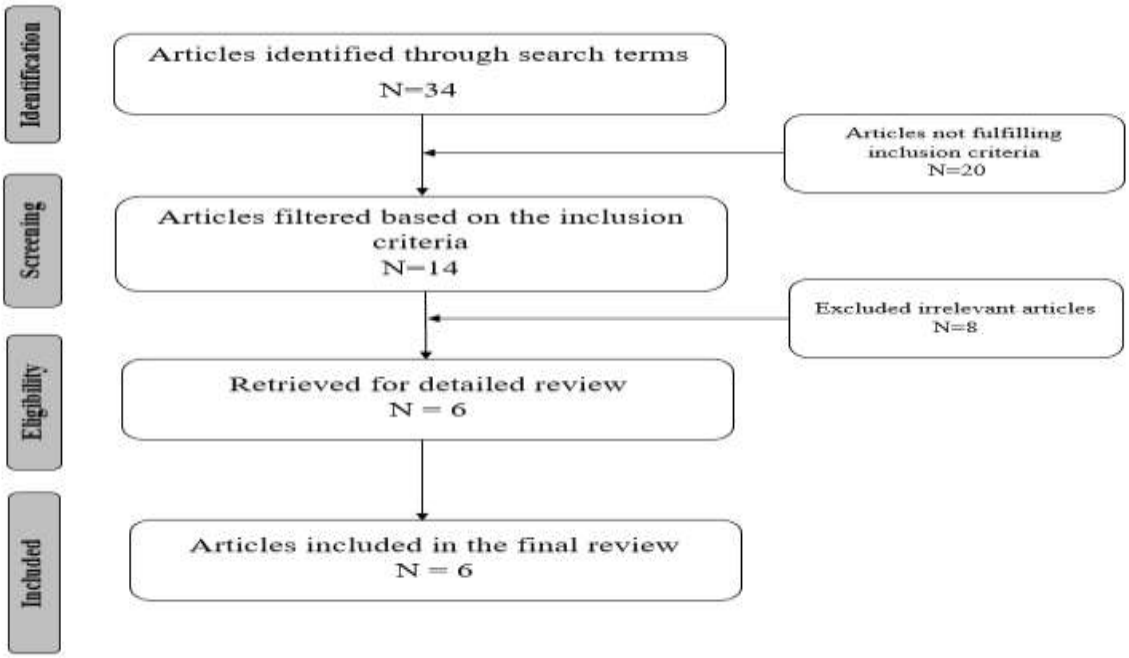
This narrative review systematically synthesizes existing literature on barriers and enablers to EBP implementation among physiotherapists, following principles of the Scale for the Assessment of Narrative Review Articles (SANRA) to ensure a structural and transparent approach. Given that this study is a narrative review of existing published literature, it did not involve direct data collection from human participants. Therefore, ethical approval was not required. This review adhered to established guidelines for synthesizing published data and ensuring responsible use of information. A comprehensive investigation of was executed on PubMed, utilizing Boolean operators and specific keywords such as "evidence-based practice",

"physiotherapy", "clinical practice", "implementation", and "barriers". The initial search yielded 34 articles. Each of these articles was then meticulously screened, focusing on those available in full text and written in English to ensure accessibility and relevancy. This screening process was designed to identify studies that evaluated the effectiveness of EBP in clinical settings and uncovered the challenges physiotherapists encounter during its implementation. The gathered data were essential for constructing a detailed and reliable synthesis of current knowledge in this area.

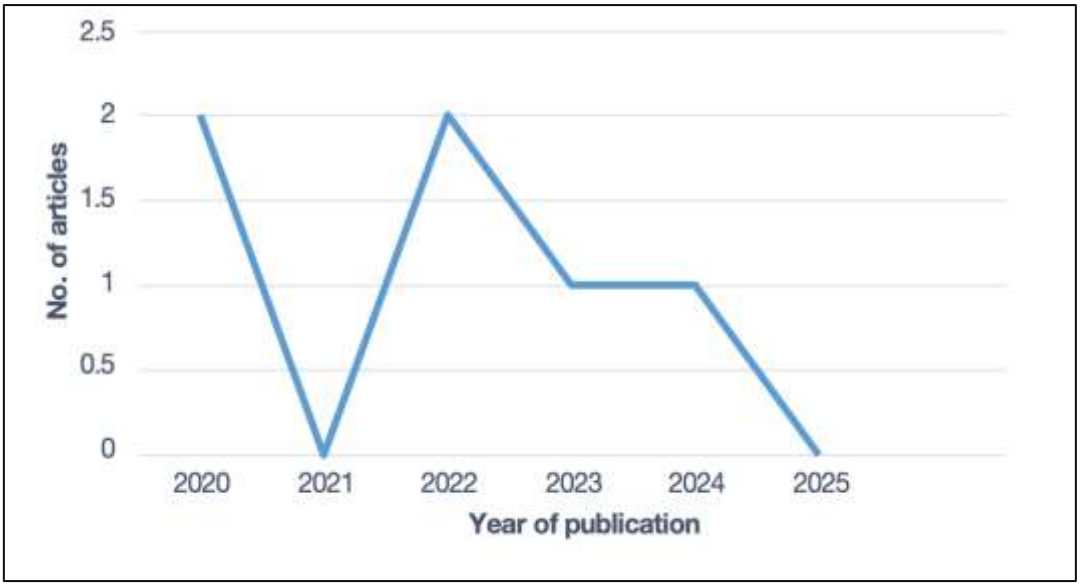
Following the inclusion criteria – free-full texts articles published in English language in the last 5 years (2020-2025), 20 articles were excluded. The remaining 14 articles were screened by their titles and abstracts. Ultimately, 6 studies qualified and were included in the current review. Key data, including study design, population characteristics, and findings related to barriers and enablers of EBP implementation, were extracted, and the quality of evidence was appraised using Consort 2010 checklist. The methodology adheres to SANRA guidelines by providing structured reporting of methods, results, discussion, and conclusions, enhancing clarity and facilitating replication.

Inclusion Criteria

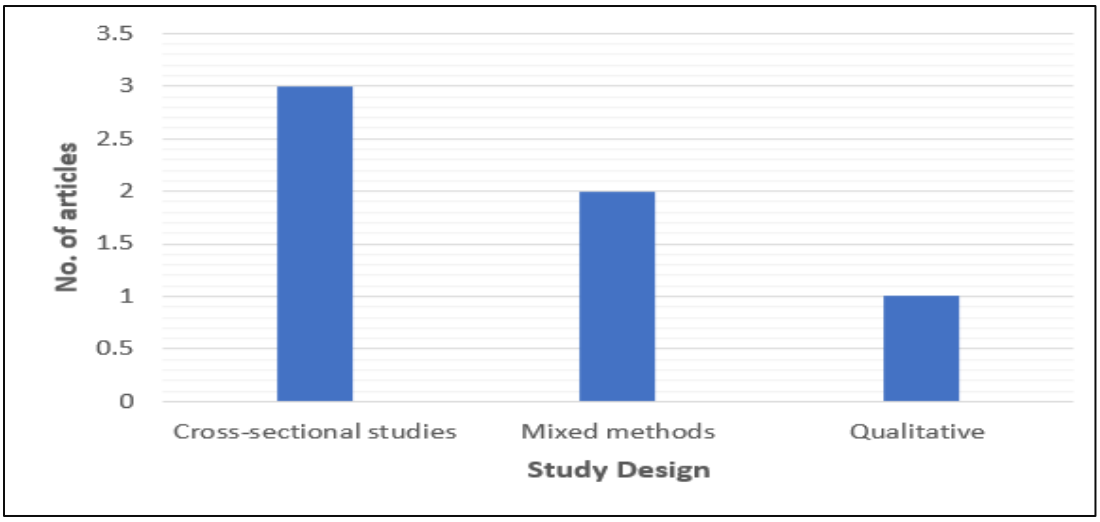
The study focused on incorporating articles published from 2020-2025 (graph 1) prioritizing the most recent and pertinent research available in full text and written in English. These trials specifically targeted physiotherapists, ensuring that the findings were directly applicable to the scope of physiotherapy and EBP. The inclusion criteria fundamentally aimed to provide a contemporary and thorough overview of the recent advancements and challenges in EBP within physiotherapy. Studies were excluded if they were duplicates, did not meet rigorous methodological standards, lacked full-text availability, did not primarily address EBP implementation among physiotherapists, or were non-research articles such as editorials or commentaries.



Flowchart-1: Flowchart depicting the methodology and inclusion criteria of the review.



Graph 1: Number of articles included in the review published from 2020-2025.

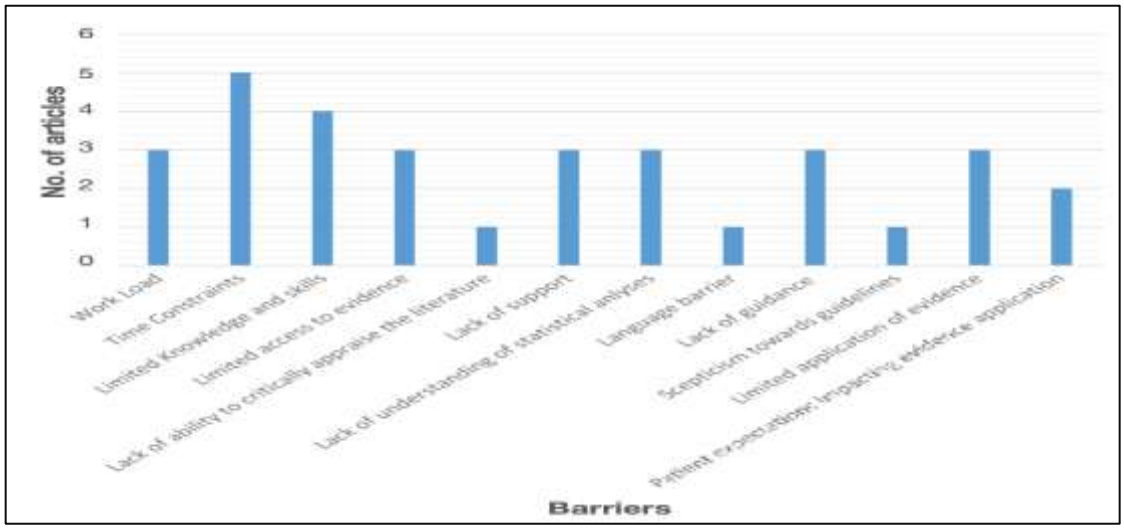


Graph 2: Number of articles included in the review characterized by study design

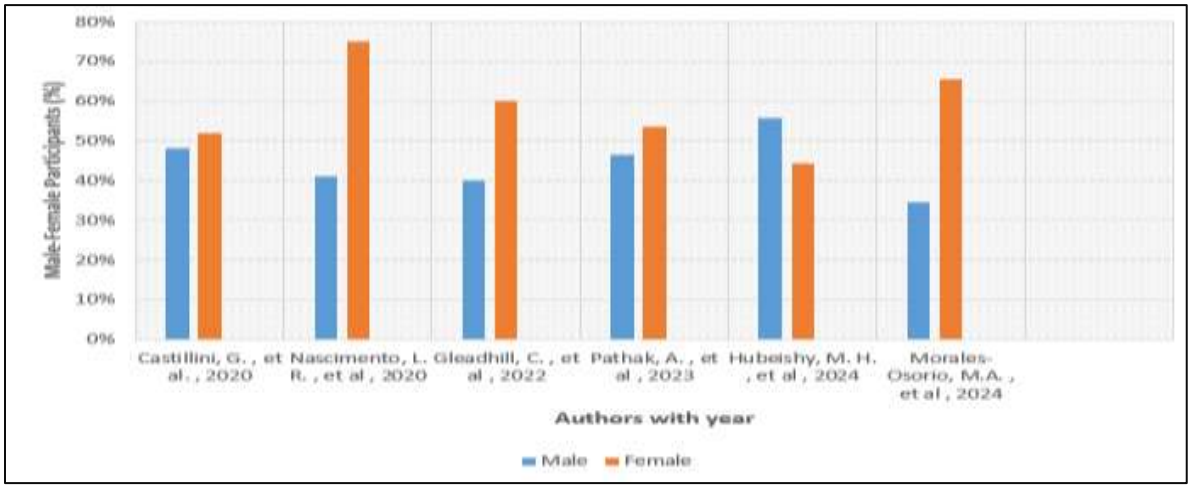
RESULTS

After a thorough research and review based on the selected criteria, 6 studies were selected, in order to focus on the integration of scientifically validated practice in physiotherapy in different regions. Graph 1 illustrates the number of articles included in the review from 2020 to 2025. Additionally, Graph 2 shows the distribution of study designs, emphasizing the prevalence of cross-sectional studies. The findings of these studies are synthesized in Table 1 entitled 'Summary of Findings'. The studies revealed that the physiotherapists across the world hold a positive attitude and belief towards the evidence-based physiotherapy. They believe that EBP improves the clinical-decision making and quality of patient care. Despite holding a

positive perception and conviction, certain barriers such as time constraints, workload, lack of knowledge and skills, lack of resources, language barrier, unable to analytically evaluate the literature, lack of guidance and mentorship, unable to understand statistical analyses hinder the successful incorporation of EBP in clinical practice. Graph 3 characterizes articles by barriers to EBP highlighting time constraints as most significant barrier. Among practitioners, a lack of familiarity and variability in understanding EBP terms and concepts were found. Addressing these barriers is the ultimate need and it is a collective responsibility to fully integrate EBP into physiotherapy



Graph 3: No. of articles characterized by the barriers to EBP.



Graph 4: Distribution of male and female participants (%) as reported by different authors over various years.

Table-1 SUMMARY OF FINDINGS

Author & Year	**Study Region/ Population**	**Study Focus**	**Methodology used**	**Key Barriers identified**	**Key Enablers Identified**	**Specific Recommendations**	**Study Quality**
Nascimento LR, et al. 2020	Brazilian Physiotherapists N=164	Attitude towards EBP	Survey-based; assessed using validated questionnaires.	Time constraints (62%), lack of comprehension (32%), inadequate support (32%), lack of interest (5%), lacks broader applicability (33%).	Positive attitudes towards EBP (92%), strong desire for skill development (94%), recognition of EBP's importance (83%).	Establish structured mentorship programs, provide accessible training workshops on research tools, and allocate protected time for EBP activities.	Low
Castellini G, et al. 2020	Italian Physiotherapists N=1289	Knowledge, attitudes, and barriers to EBP	Cross-sectional online survey	Lack of time, workplace barriers, limited knowledge of specific terms, misunderstanding of EBP components, lack of financial support.	Perceived usefulness of EBP (90%), familiarity with EBP principles (85%), ability to search online databases (75%).	Enhance understanding of EBP by addressing gaps in statistical knowledge, correcting misconceptions regarding patient preferences and clinical expertise, and prioritizing its practical application over theoretical familiarity.	Low

Gleadhill C, et al. 2022	Regional Australia (New South Wales) N=57	Opinions, access, and application of evidence	Mixed-method study [Online] Survey (n=41), Focus groups (n=8), both (8)	Competing demands, patient expectations, time constraints, environmental factors (funding), social factors (lack of mentorship), access to evidence behind paywalls, low confidence in statistics.	Environmental/systemic factors (incentives for EBP), social factors (culture of accountability & mentorship), structural support from workplace.	Address inconsistencies between physiotherapists' perceptions of patient expectations and actual patient expectations, improve access to evidence, and enhance mentorship.	Low
Author &Year	**Study Region/ Population**	**Study Focus**	**Methodology used**	**Key Barriers identified**	**Key Enablers Identified**	**Specific Recommendations**	**Study Quality**
Pathak A, et al. 2023	Nepal Physiotherapists N=151	Implementation of Standardized outcomes measures	Exploratory sequential mixed-methods (Qualitative→ Quantitative): Focus groups (n=26) & Online survey (n=125)	Lack of time , lack of outcome measures in local language, inability to follow-up with patients, perceived inability of patients to understand outcome measures, intensive caseload, organizational culture (cultural hierarchy).	Mandating outcome measure use through regulations at organizational or national level, provision of training, cross-cultural adaptation to Nepali.	Establish consensus on which measures to use, cross-sectional adaptation of these measures, develop pathways for regulation.	Low

Hubeishy MH, et al. 2024	Central Denmark Region (Danish Physiotherapists and chiropractors) N=18 (9 each)	Barriers to using Low back pain clinical practice guidelines	Qualitative constructivist grounded theory: Semi-structured interviews from primary care	Skepticism due to doubts about validity and applicability of the guidelines among physiotherapists.	Not explicitly identified, but implied: Trust in guideline validity and applicability; A biopsychosocial professional identity.	Enhance guideline applicability by individualizing recommendations, integrating the biopsychosocial model into education, and providing skill-focused training.	Low
Morales-Osorio MA, et al.	Latin American Countries N=4099	EBP use, associated factors, barriers, and facilitators.	Cross-sectional web-based questionnaire survey	Insufficient time (53%), Lack of resources (20.8%), lack of research tools (13.6%).	Individual characteristics, workplace factors, clinical experience, educational background, demographic characteristics (act as both barriers and	Identify methods and strategies to support PTs in adopting EBP in Latin America. The improved access to	Moderate

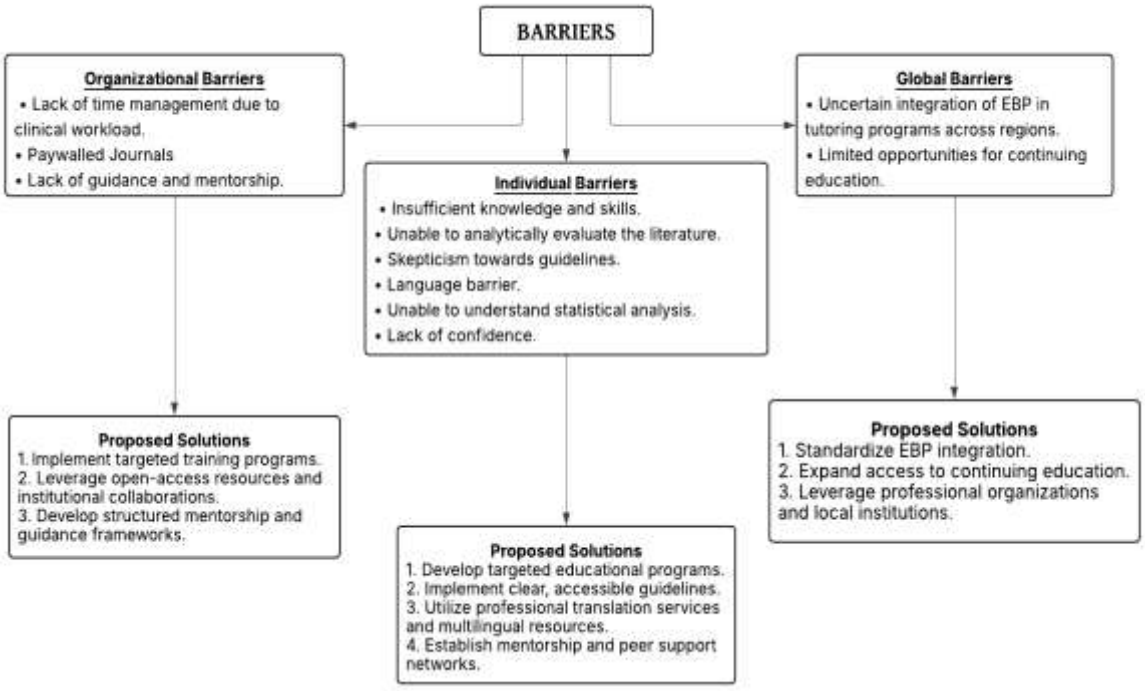


Figure 1 – Barriers to Implementation and proposed solutions.

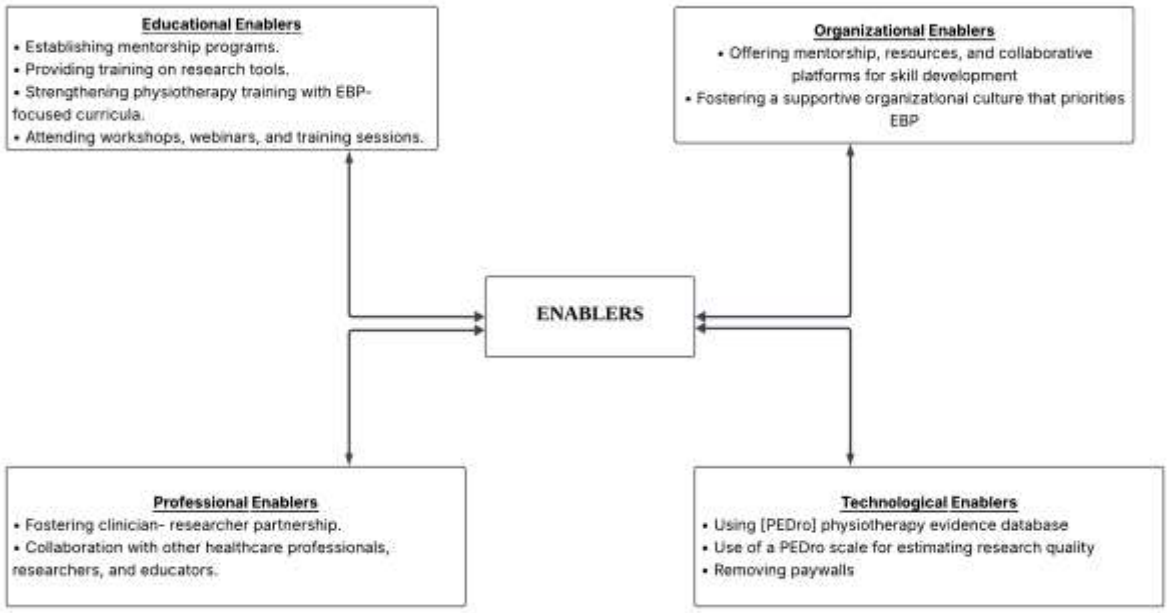


Figure 2 – Key Enablers for implementing Evidence-based practice.

DISCUSSION

The review identified that physiotherapists across the world demonstrate a positive deposition towards EBP, highlighting its prominence in clinical decision making and quality of therapeutic care. The path of EBP implementation is not without its obstacles. These barriers highlighted in the review, span organizational, individual, and global dimensions, requiring a comprehensive approach to address each facet effectively (depicted in figure 1). Time constraints due to heavy workload stand out as a significant impediment (graph 2). Physiotherapists often find themselves caught in a whirlwind of patient appointments, administrative tasks, and documentation, leaving little room for engaging with research. The challenge is further compounded by the limited accessibility to scholarly articles due to paywalls and inadequate guidance and mentorship leaving practitioners without support needed to navigate the complexities of EBP. At the individual level, insufficient knowledge and skills pose a considerable challenge. Many physiotherapists lack the necessary training in research methodologies, statistical analysis, and critical appraisal of literature, hindering their ability to evaluate and apply research findings effectively. Skepticism towards clinical guidelines, language barriers, lack of confidence also contributes to the challenges of EBP implementation. On a global scale, inconsistencies in EBP integration and limited access to continuing education create disparities in physiotherapy practices and hinder adoption of evidence-based approaches.

Addressing these multifaceted barriers requires a comprehensive and coordinated approach involving healthcare organizations, educational institutions, and individual practitioners. Healthcare organizations should prioritize strategies to alleviate time constraints, such as streamlining administrative tasks, optimizing scheduling practices, and providing dedicated time for research and EBP activities. Negotiating institutional subscriptions to scholarly journals and promoting the use of open-access resources can enhance access to evidence. Furthermore, implementing structured mentorship programs and fostering a supportive organizational culture can provide practitioners with the guidance and encouragement needed to engage with

EBP. Targeted educational programs can enhance knowledge and skills in research methodologies, statistical analysis, and critical appraisal of literature. These programs should emphasize practical application, providing practitioners with the tools and strategies needed to evaluate and apply research findings effectively. Clear, concise, and accessible clinical guidelines, developed in collaboration with practicing physiotherapists, can help reduce skepticism and promote the adoption of evidence-based recommendations. Providing language support services and translated resources can help overcome language barriers, ensuring that evidence is accessible to a diverse range of practitioners. Collaborative efforts are needed to standardize EBP integration across different regions. This can involve developing international guidelines, sharing best practices, and promoting the adoption of evidence-based curricula in physiotherapy training programs. Expanding access to continuing education thorough online courses, webinars, and international conferences can also help ensure that practitioners worldwide have access to the latest evidence and best practices.

Enablers for EBP implementation (figure 2) included that educationally, mentorship programs, training on research tools, enriched physiotherapy curricula emphasizing EBP, and hands-on workshops serve as crucial building blocks for practitioners to confidently engage with research findings. Organizationally, cultivating a workplace that champions EBP, offering robust mentorship, providing ample resources, and fostering collaborative platforms becomes essential for skill development and knowledge sharing. Technologically, the utilization of specialized physiotherapy evidence databases like PEDro, coupled with concerted efforts to remove paywalls, expands access to critical research and streamlines the retrieval of relevant evidence. Professionally, nurturing clinician-researcher partnerships and facilitating collaboration among healthcare experts, researchers, and educators pave the way for the generation and seamless translation of evidence into tangible clinical practice. Additionally, the validity and reliability of the conclusions derived from the available evidence are significantly constrained by the inclusion of studies that are predominantly of low to moderate quality in this review, underscoring the need for high quality research to strengthen the overall findings.

CONCLUSION

The review demonstrates that physiotherapists worldwide generally hold a favorable view of EBP, recognizing its value in enhancing the profession. However, despite this favorable perception, multiple challenges continue to hinder the effective integration of EBP in clinical settings. These obstacles span organizational, individual, and systemic levels, with time constraints and limited research accessibility being particularly prominent. The review also highlights gaps in training and mentorship that reduce practitioners' ability to critically appraise and apply evidence. Although enablers such as leadership support and educational initiatives exist, the overall advancement of EBP remains limited. Importantly, the authors note that the low to moderate quality of the inclined studies restricted the depth and reliability of the data available, underscoring the need for more rigorous research to better inform strategies that can promote consistent and effective EBP implementation in physiotherapy.

CONFLICTS OF INTEREST: Nil

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