https://doi.org/10.35845/kmuj.2025.24107

VIEWPOINT

Bridging the gap: the need for research mentorship and publication culture in physical therapy education in Pakistan

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ABSTRACT

Research and publications are integral to evidence-based healthcare, yet within Pakistan's physical therapy education, these elements remain underdeveloped. Although physical therapy programs have grown considerably, faculty often lack advanced research expertise, and students receive limited guidance in project design, critical appraisal, and scientific writing. Consequently, most student theses remain unpublished, representing missed opportunities to strengthen the global evidence base. This viewpoint highlights major gaps in research mentoring and publication culture in Pakistan's physical therapy programs. It emphasizes the need for structured mentorship, early student engagement in research, and institutional reforms to promote academic productivity. Developing a strong research culture is not only an academic necessity but a professional responsibility that directly influences patient care and the advancement of evidence-based practice. International models demonstrate that investment in faculty development, research capacity building, and collaborative publishing can significantly improve outcomes. Adopting similar strategies in Pakistan could empower students, enhance faculty productivity, and ensure that locally generated evidence informs clinical practice. Strengthening research mentorship and cultivating a publication culture are therefore essential steps to bridge the divide between education and practice, aligning physical therapy education in Pakistan with global standards of healthcare innovation.

Keywords: Research (MeSH); Mentors (MeSH); Research mentorship (Non-MeSH); Physical therapy education (Non-MeSH); Publication culture (Non-MeSH); Physical Therapists (MeSH); Evidence-Based Practice (MeSH); Physical therapy students (Non-MeSH); Higher education (Non-MeSH); Pakistan (MeSH).

THIS ARTICLE MAY BE CITED AS: Wahid E. Bridging the gap: the need for research mentorship and publication culture in physical therapy education in Pakistan. Khyber Med Univ J 2025;17(3):377-81. https://doi.org/10.35845/kmuj.2025.24107

INTRODUCTION

Worldwide, physical therapy (PT) increasingly emphasizes research literacy and evidence-based practice. In Pakistan, the Doctor of Physical Therapy (DPT) curriculum across universities typically requires an undergraduate research project or thesis. However, many students fulfill this requirement in a purely formal manner, with limited methodological rigor and little opportunity or intention to disseminate findings through publication or conference presentations. Consequently, the research component risks becoming a procedural exercise rather than a capacity-building experience.

This viewpoint explores the barriers to cultivating a robust culture of research mentorship and publication within Pakistan's PT education. Drawing on lessons from medical education, it highlights how structured mentorship, faculty development, and institutional reforms can transform research from a checklist requirement into a meaningful contributor to professional growth, improved clinical care, and the advancement of scientific knowledge.

The current landscape of research in physical therapy education: In Pakistan, most (DPT) programs require a research thesis in the final year. However, supervision is often inadequate, both in terms of quality and availability.[1] The overall research output of physical therapy faculties remains limited when compared with global benchmarks.[2-5] Persistent barriers, including inadequate funding, restricted access to peer-reviewed literature, and limited institutional support, further discourage both faculty and students from pursuing publication.

The absence of a strong research culture contributes to the poor visibility of Pakistani physical therapy research in international databases. Recent publications, including letters to the editor, have drawn attention to systemic challenges within PT education, such as exploitation during the internship year and the psychological stress and burnout experienced by students.[6,7] Similar neglect extends to research training, where students' efforts are frequently undervalued, demotivating, and left unpublished.

Evidence on barriers in Pakistan and comparable contexts

Barriers in medical and health education: Several recent studies in Pakistan's medical and health sciences education highlight challenges that are likely relevant to physical therapy. Reported barriers to student research involvement include financial constraints, inadequate infrastructure, limited time, insufficient mentorship, and weak institutional incentives.[8,9] A cross-sectional survey titled "*Barriers of conducting and completing research in Pakistan among doctors*" further identified lack of training, limited institutional and financial support, poor mentoring, and inadequate statistical guidance as key obstacles.[3]

Within physical therapy, postgraduate therapists in Pakistan generally demonstrate a positive attitude and some knowledge regarding research. However, they face persistent barriers such as delayed publication, limited statistical expertise, lack of time, inadequate funding, and restricted access to essential facilities.[10] These factors collectively hinder the development of a strong research

Table I: Key barriers to research mentorship and publication culture in physical therapy education

Level	Barriers
Student Level	Weak foundation in research methods and scientific writing, low confidence, limited exposure, inadequate knowledge of the publishing process, time constraints owing to busy coursework/clinical duties.
Faculty / Mentor Level	Numerous instructors may not have sufficient expertise or training in supervision of research; mentor workload and conflicting responsibilities (teaching, clinical tasks); lack of recognition or incentive for mentorship; and often no formal mentorship training.
Institutional Level	Lack of devoted research facilities (such as statistical guidance, labs, tools, and library/journal memberships); insufficient funding for student research or publication fees; policies that fail to acknowledge or incentivize supervision or student publications in performance evaluations; and the absence of formal mentorship programs in many PT departments.
Systemic/Cultural Level	Research is regarded ancillary; publication culture neglected; inadequate distribution of student work; absence of role models; cultural and linguistic hurdles; lack of institutional accountability for research production.

culture and the dissemination of locally generated evidence.

Mentorship program examples

At the Services Institute of Medical Sciences, Lahore, a program on mentees' perceptions of formal mentorship was introduced in 2022, marking the first official mentoring initiative for MBBS students. Faculty mentors received training, and mentorship meetings were conducted monthly. More than 90% of students reported favorable experiences, particularly regarding mentor accessibility, confidence building, professionalism, and psychological support.[11]

Similarly, in 2021, Central Park Medical College, Lahore, launched a Medical Students' Research Mentoring Program involving approximately 500 MBBS students and 50 mentors. Feedback indicated that early exposure to research significantly enhanced students' interest in academic inquiry.[12]

These examples demonstrate that structured mentorship programs are both feasible and beneficial in comparable educational contexts, offering a model that could be adapted to physical therapy education in Pakistan.

Specific barriers relevant to physical therapy students: A study on postgraduate (PT) research barriers indicates that many PT practitioners and postgraduates encounter significant hurdles, although PT-specific data remain limited. Reported barriers include delays in the editorial and publication process, inadequate training in research design and statistical methods during undergraduate education, lack of time due to clinical or teaching responsibilities, and insufficient funding and infrastructural support.[10] Key barriers are summarized in Table I. These findings suggest that undergraduate PT students are likely to face similar challenges, which may be further compounded by the limited availability of qualified mentors within PT departments.

Lessons from other programs and models: Evidence from medical education in Pakistan provides insights into strategies that could be applied to physical therapy. Structured mentorship programs with planned meetings, trained mentors, and regular feedback have been shown to improve student experiences and increase engagement in research.[11,12] Peer-mentoring or quasi-peer models, in which senior students or recent graduates support junior students, can complement faculty mentorship, particularly when faculty availability is limited.[13] In addition, regulatory and accreditation bodies such as Higher Education Regulatory Authority (HERA), Higher Education Commission (HEC) and Allied Health Professionals Council (AHPC) that incorporate research and mentorship criteria into their standards can drive institutional reforms. Although these examples stem from medical colleges, the principles are directly applicable to physical therapy programs.

Proposed strategies to cultivate mentorship and publication culture in physical therapy education

The following proposals outline practical, scalable, and resource-sensitive interventions to strengthen research culture in physical therapy education:

Student-oriented interventions

- Introduce research methodology, biostatistics, scientific writing, and literature review modules early in the DPT curriculum, ideally as short courses in the first or second year, to enhance research awareness.
- Engage senior and postgraduate PT students in mentoring undergraduates on project planning, literature searches, and manuscript preparation.
- Establish student-led research and journal clubs that meet regularly to critically appraise publications and discuss contemporary research issues, thereby fostering a culture of inquiry.
- Organize seminars on publishing, navigating peer review, journal selection, and research ethics, with contributions from external collaborators such as journal editors or experienced researchers.
- Provide small departmental "seed grants" to support student-led PT research, covering basic expenses such as data collection, printing, or open-access publication fees.

Faculty and departmental strategies

- Establish a formal mentorship program by identifying and training faculty mentors, defining roles and expectations, and pairing students with mentors based on interests and availability.
- Allocate protected time within faculty workloads for mentorship and supervision and incorporate the quality of mentorship into faculty evaluation and promotion criteria.
- Develop departmental support

Table II: Common challenges to establishing research mentorship and publication culture in physical therapy education and their potential mitigation strategies

Level	Mitigation Strategies
Faculty workload / limited mentor availability	Use near-peer mentors, reduce mentor-student combinations, spread mentorship assignments, and offer concrete rewards.
Lack of funds / limited infrastructurel	Seek external funds, employ pooled resources, emphasize low-cost activities, collaborate with existing centers, and negotiate budget reallocations.
Resistance to change / institutional inertia	Approach institutional leadership proactively; share data from similar initiatives; pilot success stories; and raise awareness of advantages (student accomplishment, recognition, and institutional reputation).
Students' low confidence / lack of skill in writing / statistics	Provide early workshops, peer help, and mentorship in phases (for example, from literature review to entire manuscript) to guarantee good feedback.
Sustainability issues	Incorporate mentorship programs into institutional policy; provide funded funding; assess outcomes; and tweak programs as necessary.

services, such as statistical/biostatistical consultation, academic writing guidance, and ethical review assistance, to reduce common technical barriers faced by students.

• Promote collaborative approaches, including co-supervision, interdepartmental and inter-university projects, and partnerships with active research institutions nationally and internationally, to distribute mentorship responsibilities and expand resources.

Institutional and regulatory measures

• Accreditation bodies and university quality assurance systems should include indicators related to student research outcomes and mentorship structures, such as student publications and formal mentorship programs.

• Institutions must allocate resources for research facilities, including software, laboratory materials, and journal access, and provide subsidies for publication fees, particularly open-access charges.

• Establish national or regional mentor training hubs, coordinated by PT associations or national research councils, to deliver regular training, webinars, and mentorship toolkits.

• Introduce incentives for faculty mentorship and student publications, such as awards, formal recognition, and consideration in promotion criteria.

• Key organizations with the potential to drive mentorship networks, publication culture, and resource accessibility include the (HEC) of Pakistan, the (AHPC), and the Pakistan Physical Therapy Association (PPTA).

Monitoring, evaluation, and sustainability

• Define measurable indicators, such as the number of completed student research projects, undergraduate publications, and student satisfaction with mentorship experiences.

• Incorporate regular feedback from both mentees and mentors to assess program strengths and identify areas for improvement.

• Implement pilot initiatives in selected institutions, systematically document successes and challenges, and refine approaches prior to broader scale-up.

• Secure long-term sustainability through institutional commitment, leadership support, dedicated personnel, and integration of mentorship within strategic policies and initiatives.

Potential challenges and how to mitigate them: Recognizing that the adoption of the proposed strategies may face resistance and practical challenges, Table II outlines potential problems along with suggested approaches to address them.

The need for research mentorship: Research mentoring serves as a vital bridge between theory and practice. Mentors guide students in formulating researchable questions, selecting appropriate methodologies, and developing critical thinking skills. Structured mentorship not only enhances student confidence and competence but also improves the overall quality of research and supports long-term academic career development.[4] Internationally, me-ntorship has been strongly associated with increased publication rates and higher research output in health sciences education.[14] Pakistan's physical therapy programs should adopt similar models to strengthen their research culture and align with global standards.

DISCUSSION

A cultural shift is required to move from a system where research and thesis requirements are fulfilled through minimal compliance, to one where students actively contribute to publications and faculty are incentivized to mentor. Rather than imposing research projects as an obligation, institutions should foster an ecosystem that includes trained mentors, institutional support, policy incentives, recognition, and student empowerment.

Physical therapy departments may face unique challenges, such as a limited number of faculty with strong research backgrounds, underutilization of research infrastructure, and a weaker publication tradition compared to medicine. However, these barriers are not insurmountable. Experiences from medical colleges demonstrate that even in resource-constrained environments, successful mentorship programs can be developed. Adaptation is key: PT departments can begin modestly, such as piloting online initiatives, forming inter-university partnerships, leveraging peer mentorship, sharing resources, and gradually scale up their efforts. A viable solution lies in establishing a structured cycle designed to address these gaps. Within this cycle, mentorship serves both as the foundation and as a reinforcing outcome of a strong research culture. By implementing faculty-led mentorship programs, students can engage meaningfully in research early in their training and produce outputs that extend beyond academic requirements, contributing

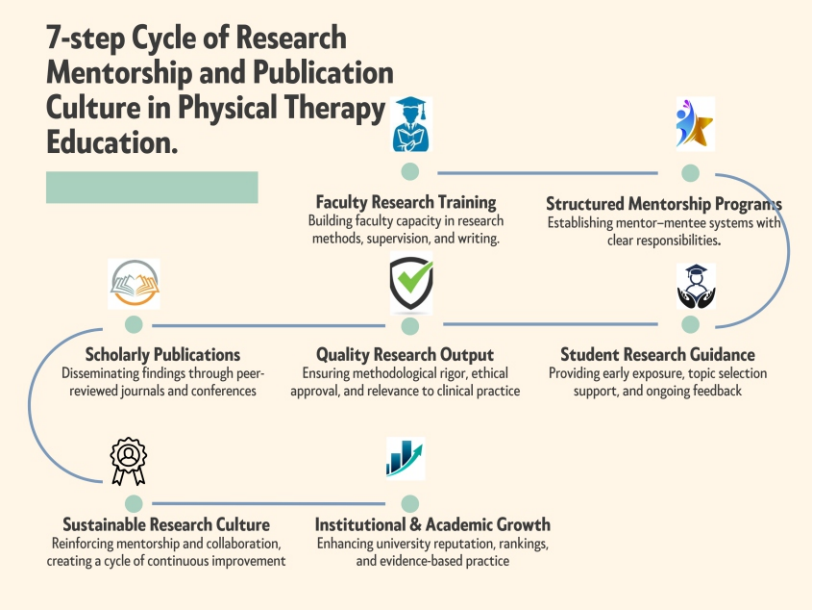

Figure 1: The seven-step cycle of research mentorship and publication culture in physical therapy education

to the broader body of knowledge.

As an illustration, a seven-step cycle of research mentorship and publication culture in physical therapy education is proposed (Figure 1).

The cycle begins with faculty research training, which establishes the foundation for methodological rigor and supervisory competence. Prepared faculty can then initiate structured mentoring programs with clearly defined objectives and accountability indicators. Such programs support students at critical stages of the research process-selecting topics, developing proposals, collecting and analyzing data, and disseminating findings. This structured guidance promotes the production of high-quality, ethically sound, and methodologically robust student research.

The resulting outputs flow into publications in academic journals, conference presentations, and other forms of knowledge dissemination, thereby enhancing the national and international visibility of physical therapy research. Over time, this body of work contributes to institutional growth, departmental credibility, opportunities for collaboration, and improved university rankings. These achievements, in turn, foster a sustainable research culture in which mentorship becomes institutionalized, research activity is normalized, and new generations of faculty and students engage in the cycle with progressively greater potential.

Thus, the process is not linear but cyclical, emphasizing that professional development and institutional progress, through research mentorship and publication, are mutually reinforcing. Such a framework in physical therapy education in Pakistan has the potential to transform the academic environment by narrowing the mentorship gap and embedding evidence-based practice as a standard rather than an exception.

Recommendations and call to cction: To address the gaps in research mentorship and publication culture within physical therapy education in Pakistan, we propose the following short-term and long-term measures:

Immediate Steps (within 1 year)

• Establish or strengthen departmental mentorship programs in which faculty mentors are assigned undergraduate mentees, with a minimum number of structured meetings.

• Organize workshops on research methodology, scientific writing, and the use of statistical tools.

• Create student-led research and journal clubs to promote critical appraisal and academic discussion.

• Identify and provide funding, even modest seed grants for undergraduate PT research projects.

Medium-Term Steps (1–3 years)

• Integrate mentorship quality and publication performance into faculty evaluation, promotion, and advancement criteria.

• Develop departmental support units helping in statistics, academic writing, and ethics review.

• Build inter-university and interdepartmental networks to facilitate shared supervision and resource exchange.

• Formalize mentorship training and resources in collaboration with national or regional PT associations.

Long-Term Steps (3+ years)

• Ensure that mentorship activities and student publication outcomes are formally mandated by national and regional accreditation standards in PT program evaluations.

• Establish national or regional mentor training hubs or centers.

• Introduce monitoring and evaluation systems with published benchmarks and baseline measures.

• Foster a culture in which student research outputs are actively expected and valued through conferences, journal publications, and institutional recognition or rewards.

CONCLUSION

The integration of research mentorship and a publication culture into physical therapy education should be regarded not merely as an academic requirement but as a professional responsibility. Without such integration, graduates' risk remaining consumers rather than contributors of knowledge. Evidence from countries such as the United States and the United Kingdom demonstrates that organized mentorship programs and early exposure to research enhance both student and faculty productivity.[14,15] One model that Pakistan could adapt is a tiered mentorship system, in which senior researchers train faculty, who in turn mentor students within a structured framework.

Another critical consideration is the prevailing cultural perception of research. In Pakistan, research is often viewed as an obstacle to graduation rather than as an intellectual endeavor. This mindset must shift toward recognizing research as an integral component of clinical excellence. Emerging opportunities, including open-access publishing platforms and AI-based writing tools, can help reduce barriers for both students and faculty. Universities may also integrate digital research management systems to streamline supervision, plagiarism checks, and reference management.

At the policy level, reforms are needed. HEC should introduce minimum standards for research and publication within DPT programs. Additionally, partnerships with rehabilitation centers could foster practice-based research, ensuring that findings are not only published but also translated into clinical practice.

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CONFLICT OF INTEREST

The author declares no conflicts of interest, financial or otherwise, that could compromise the integrity, objectivity, or validity of the opinion or viewpoint expressed.

GRANT SUPPORT AND FINANCIAL DISCLOSURE

Authors declared no specific grant for this research from any funding agency in the public, commercial or non-profit sectors