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Knowledge and Attitude of Physiotherapists Towards Communication Skills in Physical Therapy Sessions in Khartoum State of Sudan: A Cross-Sectional Study

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DECLARATIONS

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ABSTRACT

Background: Strong communication skills are central to improving physiotherapy outcomes and fostering patient trust and satisfaction. While their importance is widely recognized, there is limited evidence on how well physiotherapists in low and middle-income countries are equipped for effective clinical communication. **Objective:** To explore the knowledge and attitude of physiotherapists toward communication skills in clinical practice in Khartoum State of Sudan. **Methodology:** A descriptive cross-sectional design was employed among physiotherapists working in selected hospitals and clinics. Using purposive sampling, a total of 89 participants were enrolled. Eligible participants were qualified physiotherapists currently practicing in the chosen institutions. Physiotherapy students and other healthcare professionals were excluded. Data were collected through a structured self-administered questionnaire comprising 11 knowledge (yes/no) and eight attitude (Likert scale) items. Knowledge was considered adequate when more than five correct responses were provided, and attitudes were categorized as positive when more than five favorable answers were given. Descriptive statistics, frequencies, and percentages were generated and presented in tables and figures. Ethical clearance was granted by the Ahfad University for Women Research Committee, and institutional permissions were secured. Informed consent was obtained from all participants. **Results:** Most participants were female (88%), aged 25-30 years (96%), and held a bachelor's degree (88%). High knowledge of communication skills was observed in 89% of respondents, while 93% expressed positive attitudes. Although 91% had communication skills included in their undergraduate curriculum, only 45% reported receiving postgraduate training. Notably, 30% remained neutral about their skill adequacy despite strong knowledge levels. **Conclusion:** Physiotherapists in Sudan demonstrate an encouraging level of knowledge and positive attitudes toward communication skills. However, the gap between academic learning and practical application highlights the need for more structured postgraduate training and ongoing professional development to enhance real-world communication competence.

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INTRODUCTION

Physiotherapy practice focuses on restoring and improving movement to enhance functional independence and overall quality of life. Central to achieving these goals is clear and effective communication between therapists and patients, which shapes the entire therapeutic process from assessment to treatment delivery and follow-up.^{1,2} Beyond prescribing exercises, physiotherapists must foster trust, motivation, and patient engagement, making communication a cornerstone of high-quality care and positive health outcomes.³ As an evidence-based discipline, physiotherapy integrates communication into clinical reasoning, ethical practice, and decision-making.^{4,5}

Two major frameworks guide communication in this field. The biopsychosocial model emphasizes understanding the interaction of biological, psychological, and social factors, encouraging open dialogue, empathetic listening, and holistic patient management.^{6,7} Meanwhile, patient-centered communication seeks to reduce hierarchical barriers, promote shared decision-making, and prioritize patient narratives through active and reflective listening.⁸ However, numerous obstacles can hinder effective interaction. Language differences, cultural norms, environmental factors, physical or cognitive limitations, time constraints, and psychosocial stressors often create barriers for both patients and clinicians.^{9–12} Traditional biomedical approaches that position the practitioner as the sole expert may further widen the gap between theoretical models and actual clinical practice, marginalizing patient perspectives.¹³ This misalignment between intended messages and perceived meanings can compromise patient trust and treatment effectiveness.^{14,15}

While interest in enhancing communication competencies within physiotherapy is increasing, most available evidence originates from high-income countries. In contrast, research from low and middle-income countries (LMICs) remains scarce.^{16,17} In resource-constrained settings such as Africa and Asia, high patient volumes, limited infrastructure, and systemic barriers make communication skills even more vital for patient participation and shared care planning.^{18–20} Physiotherapy often involves long-term therapeutic relationships where clear, empathetic, and culturally sensitive communication fosters

adherence, trust, and satisfaction.²¹ Deficiencies in these skills can lead to incomplete histories, clinical errors, and suboptimal patient outcomes.^{22,23}

In Sudan, despite the central role of communication in healthcare, limited research has explored its integration as a core competency among physiotherapists. Evidence from other LMICs demonstrates that structured communication training can strengthen clinical competence and improve patient outcomes.^{18,24} Against this backdrop, this study investigates the knowledge and attitude of Sudanese physiotherapists toward clinical communication, aiming to highlight opportunities for strengthening patient-centered care in physiotherapy practice.

METHODOLOGY

This study was carried out in Khartoum State, encompassing the three major cities of Khartoum, Omdurman, and Bahri. The target population included physiotherapists employed in selected healthcare facilities within these areas. Eligible participants were qualified physiotherapists currently practicing in the chosen institutions. Physiotherapy students and other healthcare professionals were excluded. A purposive sampling strategy was adopted to identify institutions with active physiotherapy services. Four categories of healthcare facilities were represented in the sample: government hospitals 30(34%), private hospitals 23(26%), physiotherapy centers 21(24%), and non-governmental organizations 15(17%). Although the intended sample size was 100, a total of 89 physiotherapists completed the study, resulting in a response rate of 89%.

A structured, self-administered questionnaire was developed by the investigators following a review of relevant literature and consultation with subject experts. The instrument was divided into three parts. The first section gathered socio-demographic data, including age, gender, qualification, professional role, years of experience, and country of initial training. The second section assessed knowledge using 11 yes/no questions covering the concept, significance, and application of communication skills in clinical practice. The third section evaluated attitudes through eight Likert-scale statements (agree/neutral/disagree), focusing on the perceived value and use of communication

skills in physiotherapy care. For analysis, two independent scoring systems were used. Participants who answered more than five knowledge questions correctly were categorized as having adequate knowledge. Similarly, respondents who gave more than five favorable attitude responses were classified as having a positive attitude.

Data were coded and entered in Microsoft Excel 2011, then analyzed with SPSS version 23. Descriptive statistics, frequencies, and percentages were generated and presented in tables and figures. Ethical clearance was granted by the Ahfad University for Women Research Committee, and institutional permissions were secured. Informed consent was obtained from all participants, ensuring confidentiality, voluntary participation,

and the right to withdraw at any stage.

RESULTS

Table 1 presents the demographic characteristics of the 89 physiotherapists who participated in the study. Women constituted the majority of respondents, making up 88% of the sample. Most participants were within the 25-30 years age range, reflecting a predominantly young workforce (96%). In terms of educational background, the largest proportion of respondents held a bachelor's degree (88%), while smaller groups reported advanced qualifications, including clinical specialist credentials (7%), master's degrees (4%), and doctoral degrees (1%). Regarding professional roles, nearly half of the participants (49%) were employed as clinical practitioners, followed by

Table 1: Socio-demographic characteristics of physiotherapists

Variable	Category	Frequency	Percentage (%)
Work Place	Governmental hospital	30	34
	Private hospital	23	26
	Physiotherapy center	21	24
	NGOs	15	17
Gender	Male	11	12
	Female	78	88
Age (years)	25-30	85	96
	31-35	3	3
	36-40	1	1
Qualifications	Bachelors degree	78	88
	Clinical specialist	6	7
	Masters degree	4	4
	PhD	1	1
Occupation	Clinical practitioner	44	49
	Head of department	6	7
	Contractor	21	24
	Trainer	18	20
Experience Duration	<1 year	37	42
	1-3 years	30	34
	3-6 years	17	19
	≥7 years	5	6
Country of Qualification	Sudan	89	100
	Other	0	0

contractors (24%), trainers (20%), and a smaller proportion serving as department heads (7%).

Figure 1 demonstrates that respondents showed high knowledge levels across different communication domains. Patient-centered communication received the highest recognition at 97%, reflecting strong awareness of the need to build relationships between physiotherapists and patients, the requirement for supplementary psychological skills, and the importance of active listening. Nonverbal communication skills were recognized by 95% of participants, with a strong understanding of facial expressions, body language, and eye contact as essential communication components. Curriculum exposure was reported by 91% of participants who confirmed that communication skills were part of their undergraduate curriculum. However, postgraduate training showed a notable gap at 57.5%, indicating that fewer physiotherapists had received specialized communication workshops or further training after graduation, despite the high theoretical knowledge demonstrated.

Figure 2 reveals positive attitudes toward communication skills across multiple dimensions. The importance of including communication skills in the curriculum received the highest agreement at 93%, with participants strongly endorsing comprehensive communication training both during academic studies and in postgraduate work. The value of communication skills in therapy sessions was recognized by 91% of participants, reflecting positive perspectives toward communication in clinical practice. Patient engagement attitudes showed 85% agreement on the importance of explaining conditions and procedures to patients and actively listening during sessions. However, confidence in own skills

revealed a significant finding, with only 65% expressing sufficient confidence in their communication abilities to interact effectively with patients. This represents the lowest percentage among all attitude categories, suggesting potential areas for confidence enhancement despite high knowledge scores and positive attitudes toward the importance of communication skills.

Figure 3 gives an overview of the total knowledge and attitude of physiotherapists toward using communication skills in physical therapy sessions across three proficiency levels: Low, Moderate, and High. The data reveals a striking concentration of respondents at the low level, with both knowledge (89%) and attitude (93%) scoring exceptionally high, indicating a very strong foundational understanding and a correspondingly positive disposition among the vast majority. However, there is a dramatic decline at the moderate level, where knowledge drops to 11% and attitude falls to just 5%, suggesting that only a small fraction of the group possesses an intermediate grasp of the subject. Most notably, the high level is nearly unattained, with knowledge at 0% and attitude at a minimal 1%, highlighting a significant gap in advanced competency. Overall, while the group exhibits excellent baseline knowledge and a positive attitude, there is a clear and urgent need for development to help individuals progress from foundational to moderate and advanced levels of understanding.

DISCUSSION

The demographic profile of the study participants provides critical contextual information for interpreting the findings. The marked female predominance (88%) is consistent with global workforce patterns in physiotherapy, where

Figure 1: Distribution of the respondents by their knowledge

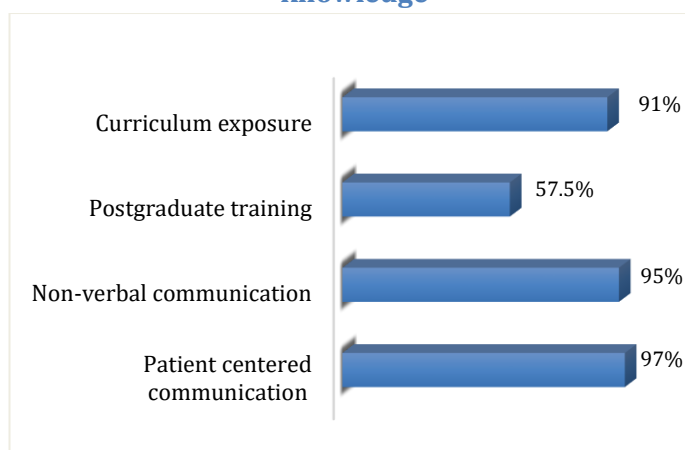


Figure 2: Distribution of the respondents by their attitude

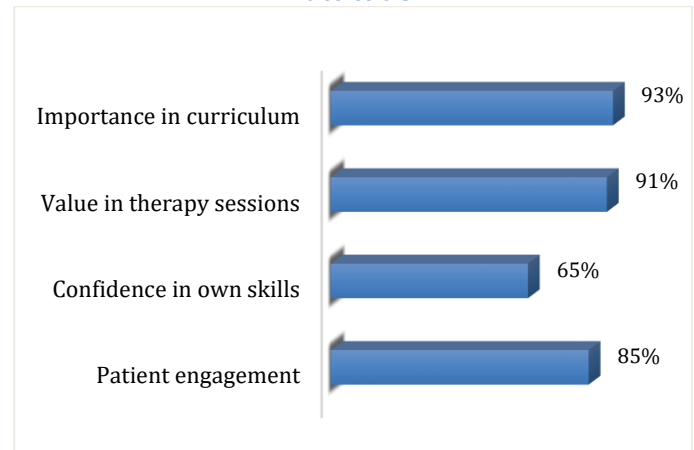
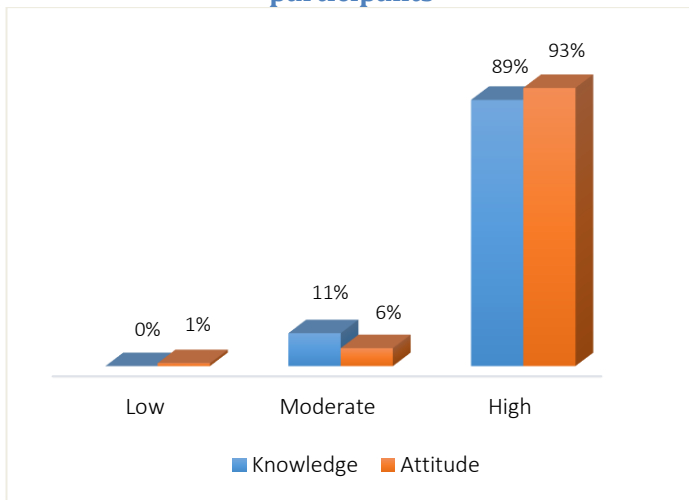


Figure 3: Total knowledge and attitude of participants

women constitute the majority. This demographic trend may influence patient-provider interactions, as previous research has shown that female health professionals are more likely to employ empathetic, patient-centred communication styles that foster greater trust and engagement.²⁵ Such interactional qualities are particularly important in physiotherapy, where therapeutic relationships play a central role in treatment adherence and clinical outcomes.

The predominance of younger participants (96% aged 25-30 years) is likely reflective of the recent expansion of physiotherapy education programs and an influx of early-career professionals into the Sudanese healthcare system. Early professional development stages represent a critical window to establish effective communication behaviours that may persist throughout clinical practice. The finding that 88% of respondents held only a bachelor's degree highlights the scarcity of structured postgraduate educational pathways. Similar patterns have been documented in other low- and middle-income countries, where structural and economic barriers restrict access to advanced education.^{26,27} As noted in the literature, a workforce with strong foundational training but limited postgraduate opportunities may struggle to meet evolving demands related to leadership, clinical specialization, and evidence-informed practice.²⁸

This context underscores the value of embedding communication training within competency-based physiotherapy education frameworks. By treating communication as a core clinical skill rather than an adjunct competency, educational institutions can better prepare graduates to meet contemporary healthcare needs.²⁹ Notably, the present study demonstrated encouraging

knowledge levels, with 89% of physiotherapists exhibiting a solid understanding of communication strategies. These findings are consistent with international evidence showing that structured curricula can successfully integrate patient-centred communication.^{30,31} Moreover, pedagogical innovations such as simulation-based training, role-play, and technology-enhanced teaching have been shown to facilitate both knowledge retention and practical skill development.³²

A substantial proportion of participants (91%) reported receiving communication training during their undergraduate education, supporting prior research that identifies curricular integration as a critical factor in developing professional communication competence.³³ However, only 45% attended specialized workshops, indicating a clear gap between theoretical instruction and practical application. This imbalance reflects a wider debate in health professions education regarding the importance of experiential and skills-based learning to achieve genuine communication proficiency.^{34,35}

Attitudinal findings further reinforce the relevance of communication training. A large majority (93%) recognized the importance of communication in clinical settings, and 92% advocated for its continued emphasis throughout both undergraduate and postgraduate education. These positive attitudes are consistent with existing evidence linking patient-centred communication to stronger therapeutic relationships and improved health outcomes.³⁶ The emphasis on empathy, cultural sensitivity, and active listening observed in this study is also aligned with international best practices, which view these elements as integral to quality care.^{37,38}

In summary, physiotherapists in Sudan demonstrate commendable theoretical knowledge and favourable attitudes toward clinical communication. However, limited access to postgraduate education and practical workshop opportunities remains a significant barrier to skill consolidation. Addressing these gaps through competency-based curricular reforms, structured continuing education, and targeted capacity-building initiatives may help align the national physiotherapy workforce with international professional standards and improve overall patient care experiences. The findings of this study should be interpreted within the context of certain

limitations. The relatively small sample size restricts the generalizability of results to all physiotherapists in Khartoum State.

Future research should involve larger, randomized samples and include observational assessments to better evaluate how self-reported attitudes align with actual clinical behaviors. Comparative studies across other low- and middle-income countries may also help identify shared challenges and adaptable strategies that can further strengthen communication training in the Sudanese physiotherapy context.

CONCLUSION

This study emphasizes that physiotherapists in Khartoum State generally possess strong theoretical knowledge and display positive attitudes toward the use of communication skills in clinical settings. The integration of communication-related content within undergraduate physiotherapy curricula reflects meaningful progress by academic institutions in embedding this crucial professional competency. However, the scarcity of postgraduate opportunities and specialized workshops indicates a clear gap in advanced, applied training. While many participants expressed confidence in their communication abilities, self-reported data should be interpreted cautiously, as it may not accurately represent real-world clinical performance.

These findings suggest that although communication is widely recognized as a vital element of physiotherapy practice in Sudan, further efforts are required at both institutional and policy levels to ensure that theoretical understanding is consistently translated into effective clinical behaviors. Strengthening postgraduate and continuing education programs could bridge this gap and improve patient-practitioner interactions.

To address these challenges, undergraduate training should be expanded to include experiential learning methods such as simulation-based exercises, interactive workshops, and structured role-playing, which have been shown to enhance communication competence and confidence. In addition, professional associations and health authorities should develop accessible, context-specific continuing professional development programs to equip physiotherapists with advanced communication skills that

contribute to better patient outcomes. Institutional and regulatory bodies should also recognize communication as a core competency in physiotherapy education and integrate related standards into accreditation frameworks.

DECLARATIONS

Consent to participate: Written consent had been obtained from patients. All methods were performed following the relevant guidelines and regulations.

Availability of Data and Materials: Data will be made available upon request. The corresponding author will submit all dataset files.

Competing interests: None

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REFERENCES

1. Abaraogu UO, Aguji KR, Duru DO, Okafor UC, Ezeukwu AO, Igwe SE. Physiotherapist-patient communication in entry-level physiotherapy education: A national survey in Nigeria. *Hong Kong Physiotherapy Journal* 2019; 39(1): 77-87. <https://doi.org/10.1142/S1013702519500070>
2. Abdalmagid T, Abdelnour H, Aladwan R. Physiotherapy students and clinical education in Sudan. *International Journal of Novel Research in Healthcare and Nursing* 2023; 10(3): 197-201. <https://doi.org/10.5281/zenodo.10046022>
3. Abdelnour H, Khalil A, Alkazaaleh H, Alkhazaaleh S, Abuzaid II. Physiotherapy and the intensive care unit in Sudan. *Fizjoterapia Polska* 2025; 25(2); 357-362. <https://doi.org/10.56984/8ZG00E1D84Y>
4. Abdelnour H, Mohamed A, Tigani D El, Abdallha B. Physical Disabilities and Rehabilitation Services in Khartoum State, Sudan. *The International Journal of Humanities & Social Studies* 2023; 11(9). <https://doi.org/10.24940/theijhss/2023/v11/i9/HS2309-016>
5. Abdelnour H, Bolis M. Clinical Placement and Clinical Skills at Ahfad University for Women's Physiotherapy Education. *International Journal of Current Research* 2023; 15(12): 26650-26653. <https://doi.org/10.24941/ijcr.46368.12.2023>
6. Aderinto N, Olatunji G, Kokori E, et al. A scoping review of stroke rehabilitation in Africa: interventions, barriers, and research gaps. *Journal of Health, Population and Nutrition* 2025; 44(1): 245. <https://doi.org/10.1186/s41043-025-01004-z>

7. Ahlsen B, Nilsen AB. Getting in touch: Communication in physical therapy practice and the multiple functions of language. *Frontiers in Rehabilitation Sciences* 2022; 3: 882099.
<https://doi.org/10.3389/fre.2022.882099>
8. Alkazaleh H, Adam Y, Abdelnour H, Bleedy N. Capsular stretching as a physiotherapy technique for Sudanese patients with knee osteoarthritis in Al-Neelain University Physiotherapy Outpatient Clinic. *Fizjoterapia Polska* 2024; 24(5): 195-200.
<https://doi.org/10.56984/8ZG020CXF6T>
9. Almalty A, Abdelnour H, Bleedy N, Ali A, Salaheldien A. Physiotherapists' perceptions of professional ethics and law. *African Journal of Biomedical Research* 2024; 27(4s): 7903 - 7909.
<https://doi.org/10.53555/AJBR.v27i4S.5111>
10. Al-Wardat M, Etoom M, Lena F, et al. Exploring communication practices in Italian physiotherapy: Knowledge and use of effective communication strategies: A national descriptive study. *Healthcare* 2023; 11(16): 2247.
<https://doi.org/10.3390/healthcare11162247>
11. Bertoni R, Conti V, Testa M, et al. Physiotherapists' training in oncology rehabilitation from entry-level to advanced education: A qualitative study. *Physiotherapy Research International: The Journal for Researchers and Clinicians in Physical Therapy* 2023; 29(1): e2060.
<https://doi.org/10.1002/pri.2060>
12. Chapman CR, Woo NT, Maluf KS. Preferred communication strategies used by physical therapists in chronic pain rehabilitation: A qualitative systematic review and meta-synthesis. *Physical Therapy* 2022; 102(9): pzac081.
<https://doi.org/10.1093/ptj/pzac081>
13. Charumbira MY, Berner K, Louw QA. Practical insights for enhancing primary care rehabilitation services in low-resource contexts. *African Journal of Primary Health Care & Family Medicine* 2025; 17(1): e1-e13.
<https://doi.org/10.4102/phcfm.v17i1.4699>
14. Cole A, Lombard E, McVeigh JG, et al. Patients' perceptions and experience of hospital-based, student-led physiotherapy treatment interventions: A survey. *Physiotherapy Practice and Research* 2024; 45(2): 181-187.
<https://doi.org/10.3233/PPR-240883>
15. Cortés-Rodríguez AM, et al. Effect of two teaching methods on nursing students' acquisition of patient-centered communication competence in older people care: A cluster randomized trial. *Frontiers in Public Health* 2024; 12: 1510620.
<https://doi.org/10.3389/fpubh.2024.1510620>
16. Davies T, et al. Informing the development of telehealth education in physiotherapy programs. Assessments and interventions for individuals accessing physiotherapy care via synchronous telehealth: A scoping review. *Musculoskeletal Care* 2025; 23(1): e70039.
<https://doi.org/10.1002/msc.70039>
17. Engel GL. The need for a new medical model: a challenge for biomedicine. *Science* 1977; 196(4286): 129-136.
<https://doi.org/10.1126/science.847460>
18. Ernstzen DV, Schmutz AMS, Meyer IS. The learning experiences and perspectives of physiotherapy students during community-based education placements. *Transformation of learning and teaching in rehabilitation sciences: A case study from South Africa*, in *Human Functioning, Technology and Health Book Series* 2022; 2: 145-168.
<https://doi.org/10.4102/aosis.2022.BK357.07>
19. Grilo AM, Vinagre G, Santos MC, Martinho JF. Attitudes toward patient-centred care, empathy, and assertiveness among students in rehabilitation areas: A longitudinal study. *Healthcare (Basel, Switzerland)* 2023; 11(20): 2803.
<https://doi.org/10.3390/healthcare11202803>
20. Hatam N, Askarian M, Taherifard E, Ahmadkhani A. Exploring patient-centered care delivery in elderly outpatient settings: A scoping review and recommendations in countries with low and middle income.
<https://doi.org/10.21203/rs.3.rs-5882301/v1>
21. Hiller A, Delany C. Communication in physiotherapy: challenging established theoretical approaches, 2018.
22. Iversen ED, Wolderslund M, Kofoed PE, et al. Communication skills training: A means to promote time-efficient patient-centered communication in clinical practice. *Journal of Patient-Centered Research and Reviews* 2021; 8(4): 307-314.
<https://doi.org/10.17294/2330-0698.1782>
23. Kwame A, Petrucka P. A literature-based study of patient-centered care and communication in nurse-patient interactions: Barriers, facilitators, and the way forward. *BMC Nursing* 2021; 20(1): 158.
<https://doi.org/10.1186/s12912-021-00684-2>
24. Luginbuehl K, Nabecker S, Greif R, et al. Transforming traditional physiotherapy hands-on skills teaching into video-based learning. *BMC Medical Education*, 2023; 23(1): 624.
<https://doi.org/10.1186/s12909-023-04556-y>
25. Mead N, Bower P. Patient-centeredness: A conceptual framework and review of the empirical

literature. *Social Science & Medicine* 2000; 51(7): 1087-1110.

[https://doi.org/10.1016/s0277-9536\(00\)00098-8](https://doi.org/10.1016/s0277-9536(00)00098-8)

26. Murry LT, Reist JC, Fravel MA, et al. An exploratory mixed methods study of standardized patient comments on empathy and student communication scores. *American Journal of Pharmaceutical Education* 2022; 86(4): 432-439.

<https://doi.org/10.5688/ajpe8642>

27. Olowoyo P, Owolabi M. Improving access to care of people living with neurological disorders through teleneurorehabilitation. *NeuroRehabilitation* 2025; 56(1): 3-4.

<https://doi.org/10.1177/10538135241303602>

28. Osborn-Jenkins L, Day E, Payne H, et al. Advice-giving skills in pre-registration physiotherapy training. *Physiotherapy Theory and Practice* 2024; 40(10): 2355-2369.

<https://doi.org/10.1080/09593985.2023.2247485>

29. Osman R, Abdelnour H, Elaalem A. Physiotherapy use of Paraffin Wax for Rheumatoid Arthritis in Sudan. *International Journal of All Research Education & Scientific Methods* 2024; 12(8). Online at:

https://www.ijaresm.com/uploaded_files/document_file/Rawia_OsmanNaZl.pdf

30. Quigley F, Ryan L, Bond R, et al. A virtual simulator to improve weight-related communication skills in healthcare professionals: Development and usability testing. *JMIR Medical Education* 2025; 11(1): e65949.

<https://doi.org/10.2196/65949>

31. Sattelmayer KM, Jagadamma KC, Sattelmayer F, et al. The assessment of procedural skills in physiotherapy education: A measurement study using the Rasch model. *Archives of Physiotherapy* 2020; 10: 9.

<https://doi.org/10.1186/s40945-020-00080-0>

32. Shousha T, Javed A, Bekhet A, et al. Investigating behavior, attitudes, knowledge, awareness, and barriers to the implementation of evidence-based practice by physiotherapists in Egypt: A cross-sectional study. *Heliyon* 2023; 9(12): e22951.

<https://doi.org/10.1016/j.heliyon.2023.e22951>

33. Shumba TW, Tekian A. Competencies of undergraduate physiotherapy education: A scoping review. *South African Journal of Physiotherapy* 2024; 80(1): 1879.

<https://doi.org/10.4102/sajp.v80i1.1879>

34. Tawiah AK, Stokes E, Wieler M, et al. Developing a core competency and capability framework for advanced practice physiotherapy: A

qualitative study. *Physiotherapy Theory and Practice* 2023; 40(7): 1477-1491.

<https://doi.org/10.1080/09593985.2023.2170196>

35. van der Scheer-Horst E, Rutten G, Stortenbeker I, et al. Limited health literacy in primary care physiotherapy: Does a physiotherapist use techniques to improve communication? *Patient Education and Counselling* 2023; 109: 107624.

<https://doi.org/10.1016/j.pec.2023.107624>

36. Zöll L, Deschner J, Hollinderbäumer A, et al. The effects of communication training on communication competence - a 360° evaluation. *BMC Medical Education* 2025; 25(1): 1128.

<https://doi.org/10.1186/s12909-025-07676-9>

37. King A, Hoppe RB. "Best practice" for patient-centered communication: a narrative review. *Journal of Graduate Medical Education* 2013; 5(3): 385-93.

<https://doi.org/10.4300/JGME-D-13-00072.1>

38. Guadie YG, Kibret AK, Adem KS, Yalew ES. Patient's satisfaction in physiotherapy outpatient departments of Amhara regional comprehensive specialized hospitals, Ethiopia. *BMC Health Services Research* 2022; 22(1): 1011.

<https://doi.org/10.1186/s12913-022-08338-y>