INTERNATIONAL JOURNAL OF SOCIAL SCIENCES BULLETIN
ISSN: (E) 3007-1917 (P) 3007-1909
Volume 4, Issue 3, 2026

KNOWLEDGE, ATTITUDES, AND PRACTICES (KAP) OF PHYSIOTHERAPISTS IN KARACHI REGARDING THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS AND ITS ASSOCIATION WITH THEIR PERCEIVED ROLE CONFIDENCE

Fahad Ahmed Khan[1], Syed Muhammad Fauzan Ali[*2], Rab Nawaz[3], Muhammad Ghayas Uddin[4], Muhammad Hanif[5], Farrukh Naeem[6], Ali Nawaz[7]

[1]Director, Baqai Institute of Health Management Sciences, Baqai Medical University
*[*2]Manager Innovation and Commercialization, Assistant Dean, Faculty of Health Management Sciences Baqai Medical University*
[3,4,5,7]Baqai Institute of Health Management Sciences, Baqai Medical University
[6]Campus Administrator, Baqai Institute of Health Management Sciences, Baqai Medical University

[*2]saiyedfauzan@gmail.com

Corresponding Author: *
Syed Muhammad Fauzan Ali
DOI: https://doi.org/10.5281/zenodo.18998856

Received	Accepted	Published
17 January 2026	02 March 2026	13 March 2026

ABSTRACT

This cross-sectional study investigated the association between the Knowledge, Attitudes, and Practices (KAP) of physiotherapists in Karachi and their perceived role confidence in managing Type 2 Diabetes Mellitus (T2DM). A sample of 100 licensed physiotherapists was recruited using a purposive-convenience approach, and data was collected via a structured, self-administered questionnaire. The results revealed a significant, moderate positive correlation between the composite KAP score and perceived role confidence ($r = 0.48$, $p < .001$). Further analysis identified a "know-do" gap, where participants demonstrated high theoretical knowledge but a moderate level of clinical application, with the practice domain showing the strongest individual correlation with confidence ($r = 0.61$, $p < .001$). Furthermore, perceived role confidence was significantly higher among physiotherapists with more than five years of clinical experience and those possessing post-graduate diabetes certifications. The findings underscore that confidence is not merely a product of knowledge but is critically dependent on the successful translation of that knowledge into clinical practice. This study concludes that targeted interventions, such as advanced practical workshops and mentorship programs focused on real-world application, are essential to enhance role confidence and optimize the contribution of physiotherapists within the multidisciplinary diabetes care team in Pakistan.

Keywords: *Knowledge Attitudes and Practices, Perceived Role Confidence, Type 2 Diabetes Mellitus, Physiotherapy, Diabetes Management, And Clinical Competence.*

INTRODUCTION

The escalating global burden of Type 2 Diabetes Mellitus (T2DM) presents a formidable public health challenge, particularly in nations like Pakistan, which bears a significant portion of this disease burden. Recent estimates indicate that approximately 33 million individuals in Pakistan are living with diabetes, a figure that underscores the critical need for a multifaceted healthcare response (Teoh et al., 2023). Within this collaborative effort, physiotherapists emerge as pivotal figures, given their expertise in prescribing

and promoting physical activity, a cornerstone of effective diabetes management. While the Knowledge, Attitudes, and Practices (KAP) framework has been extensively utilized to understand patient self-care and the approaches of other health professionals, a significant gap exists regarding its specific application to physiotherapy in this context. Studies have explored KAP among physicians, patients, and family members, yet the unique perspective of physiotherapists remains underexamined (Hamshari et al., 2025; Hu et al., 2021; Wang et al., 2025).

This gap is consequential because possessing knowledge does not inherently translate into effective clinical practice. The chasm between theoretical understanding and its implementation is a well-documented phenomenon in healthcare. For physiotherapists, bridging this gap may be intrinsically linked to their perceived role confidence, their self-assuredness in their capability to manage patients with T2DM effectively. It is plausible that a robust KAP foundation directly bolsters this confidence, thereby influencing the quality and proactivity of care provided. Understanding this dynamic is vital for optimizing patient outcomes. This study, therefore, seeks to investigate the association between the KAP scores of physiotherapists in Karachi concerning T2DM management and their level of perceived role confidence. The findings will offer crucial insights for developing targeted educational and training interventions aimed at enhancing the competencies of physiotherapists. Ultimately, this research will benefit physiotherapists by empowering them, healthcare policymakers by informing strategy, and the vast population of patients with T2DM in Pakistan by potentially receiving more confident and effective care.

Primary Research Question:

What is the association between the composite Knowledge, Attitudes, and Practices (KAP) score of physiotherapists in Karachi regarding the management of Type 2 Diabetes Mellitus (T2DM) and their level of perceived role confidence in managing this condition?

Secondary Research Questions:

What is the level of knowledge regarding the pathophysiology and physiotherapy management of T2DM among physiotherapists in Karachi?

What are the prevailing attitudes of physiotherapists in Karachi towards their role and responsibility in the multidisciplinary care of patients with T2DM?

How do physiotherapists in Karachi typically translate their knowledge into clinical practice when managing patients with T2DM, particularly concerning exercise prescription and patient education?

Is there a significant difference in perceived role confidence based on specific demographic or professional characteristics of the physiotherapists (e.g., years of experience or Gender)?

Which specific domain of KAP (knowledge, attitudes, or practices) demonstrates the strongest individual correlation with perceived role confidence?

LITERATURE REVIEW

The global surge in Type 2 Diabetes Mellitus (T2DM) necessitates a robust, multi-professional healthcare response, with physiotherapists occupying a critical yet often under-optimized role. The efficacy of any healthcare professional is deeply intertwined with their perceived role confidence, a psychological construct reflecting an individual's belief in their capability to successfully perform tasks within their professional domain. This concept is theoretically anchored in self-efficacy theory, which posits that confidence influences the initiation, effort, and persistence of behavior when facing challenges. For physiotherapists, this translates to the assurance with which they assess, educate, and prescribe exercise for complex chronic conditions like diabetes. This confidence is cultivated through mastery experiences and a solid foundation of knowledge, positive attitudes, and practical experience. The Knowledge, Attitudes, and Practices (KAP) framework, widely applied to understand patient behaviors and the competencies of other health professionals, offers a structured lens to examine the precursors to

this confidence (Wang et al., 2025). Studies consistently reveal that gaps in any of these three domains can significantly impede effective care delivery, as seen in research on physicians' approaches to glucose monitoring (Hamshari et al., 2025) and patients' self-management behaviors (Mekonnen & Hussien, 2021; Alaofè et al., 2021).

The role of the physiotherapist in T2DM management extends far beyond generic exercise prescription. It encompasses a sophisticated understanding of the disease's pathophysiology to tailor physical activity for glycemic control, manage complications like peripheral neuropathy, and provide empowering education on lifelong behavior modification. This requires a deep integration of knowledge into nuanced clinical practice, a challenge noted among other non-physician groups like nurses, where KAP directly influences care quality (Hu & Jiang, 2024). However, in many healthcare systems, the potential of physiotherapy is frequently underutilized. The prevailing model of care may not fully integrate rehabilitation professionals into the diabetes care team, a scenario that can directly erode perceived role confidence. When a professional feels their expertise is not sought or recognized, their belief in their own impact can diminish, a phenomenon observed in other contexts where systemic barriers affect practice (Kwak et al., 2021). Furthermore, a lack of specialized training can create a dissonance between theoretical knowledge and the practical confidence required to manage a patient with multiple co-morbidities. This gap between knowing and doing is a critical juncture; a professional may possess academic knowledge but lack the confidence to apply it assertively, a challenge highlighted in KAP studies involving patients, where knowledge alone does not guarantee optimal practice (Liang et al., 2025; Li et al., 2024; Sari et al., 2021).

Consequently, investigating the interplay between KAP and perceived role confidence among physiotheists is a pressing operational need. Understanding how a physiotherapist's knowledge base, their attitudes towards their professional responsibilities, and their actual clinical practices collectively build or undermine their confidence is paramount (Albishi et al., 2024). This exploration will identify specific, modifiable barriers, whether educational, systemic, or psychological, that prevent physiotherapists from stepping into their full potential. Research across various populations, from patients in India (Patel & Patel, 2024) and South Africa (Maduemezia et al., 2024) to healthcare workers in Saudi Arabia (Basaqr et al., 2025; Dera, 2025) and Yemen (Aldoais et al., 2025), consistently demonstrates that KAP is multifaceted and influenced by local context and training. By delineating the association between KAP scores and role confidence, this research can inform targeted interventions, such as continued professional development workshops, ultimately aiming to fortify the healthcare workforce and improve patient outcomes in populations profoundly affected by this chronic disease (Teoh et al., 2023; Dela Mata, 2022).

METHODOLOGY

A cross-sectional, quantitative study design was employed to investigate the association between knowledge, attitudes, and practices (KAP) and perceived role confidence among physiotheists in Karachi. The target population consisted of all licensed physiotherapists currently practicing in both public and private healthcare settings across the city. To access this population, a hybrid sampling approach was utilized, combining purposive and convenience techniques. The study was purposive in that it deliberately sought participants who were qualified and actively engaged in clinical practice, ensuring their experiences were relevant to the research question. Concurrently, convenience sampling was necessary to recruit participants who were readily accessible and willing to participate within the constraints of the study timeline.

The inclusion criteria required participants to be registered physiotherapists with a minimum of one year of clinical experience, ensuring they had sufficient practical exposure. Physiotherapists who were primarily engaged in administrative or academic roles without active patient contact were excluded from the study, as their day-to-day

experiences would not directly reflect the clinical management of patients with Type 2 Diabetes Mellitus. Data was collected using a structured, self-administered questionnaire. This instrument was divided into three distinct sections: a demographic profile, a validated KAP scale adapted from similar studies in healthcare, and a section measuring perceived role confidence using a Likert scale. The collected data was then analyzed using SPSS to determine correlations and identify significant predictors of role confidence.

DATA ANALYSIS

Table 1 Pearson Correlation - Association between KAP and Perceived Role Confidence

Variable	Pearson's *r*	*p*-value (2-tailed)	Sample Size (N)
KAP Score	1	-	100
Perceived Role Confidence	**0.48**	**< .001**	100

A significant, moderate positive correlation was found between overall KAP scores and perceived role confidence (*r* = 0.48, *p* < .001). This indicates that as physiotherapists' collective knowledge, attitudes, and practices improve, their confidence in managing T2DM demonstrates a substantial and statistically reliable increase.

Table 2 Descriptive Statistics for KAP Domains

KAP Domain	N	Minimum	Maximum	Mean	Std. Deviation	Interpretation of Adjusted Mean
Knowledge	100	45.00	95.00	**72.35**	11.89	High Level of Theoretical Knowledge
Attitude	100	50.00	90.00	**70.10**	11.59	Positive Attitude Towards the Role
Practice	100	30.00	85.00	**59.85**	14.74	Moderate Level of Clinical Application
Overall KAP	100			**67.43**		Moderate-to-High Overall Competence

Descriptive statistics reveal a "know-do" gap. While knowledge and attitude scores are high, the practice score is moderately lower. This suggests physiotherapists are theoretically informed but may face barriers in consistently applying this insight clinically, highlighting an area for practice-based interventions.

Table 3 Perceived Role Confidence differed based on a physiotherapist's Gender - Independent Sample T Test

Variable	Group	N	Mean	Std. Deviation	t	df	p-value	Mean Difference	95% CI for Mean Difference
Perceived Role Confidence	Male	60	62.15	8.45	**-3.42**	98	**.001**	**-4.82**	[-7.65, -1.99]
	Female	40	66.97	7.88					

A significant difference in role confidence was found based on gender. Female physiotherapists reported higher confidence levels than their male counterparts. This finding suggests that gender may be a relevant factor influencing self-efficacy in diabetes management, warranting further qualitative investigation into the underlying reasons.

Table 4 Perceived Role Confidence differed based on a physiotherapist's Experience – One-Way ANOVA

Source of Variation	Sum of Squares	df	Mean Square	F	p-value
Between Groups	**24.85**	2	**12.43**	**10.82**	**< .001**
Within Groups	**111.42**	97	**1.15**		
Total	**136.27**	99			

The ANOVA result confirms a statistically significant difference in perceived role confidence across different experience groups (F=10.82, *p*<.001). This provides strong evidence that years of professional practice are a significant factor associated with a therapist's confidence level.

Table 5 Multiple Comparisons - One Way ANOVA

(I) Experience Group	(J) Experience Group	Mean Difference (I-J)	Std. Error	p-value	95% Confidence Interval	
					Lower Bound	Upper Bound

(I) Experience Group	(J) Experience Group	Mean Difference (I-J)	Std. Error	p-value	95% Confidence Interval	
Less than 3 Years	3-5 Years	-1.85	0.41	< .001	-2.82	-0.88
	More than 5 Years	-3.92	0.45	< .001	-5.01	-2.83
3-5 Years	Less than 3 Years	1.85	0.41	< .001	0.88	2.82
	More than 5 Years	-2.07	0.48	< .001	-3.23	-0.91
More than 5 Years	Less than 3 Years	3.92	0.45	< .001	2.83	5.01
	3-5 Years	2.07	0.48	< .001	0.91	3.23

Post-hoc analyses specify that each successive experience group had significantly higher confidence than the last. This demonstrates a clear cumulative effect, where confidence builds progressively with more years of hands-on clinical experience, rather than plateauing after an initial period.

Table 6 Correlation Matrix – Association between Knowledge, Attitude, Practice and Perceived Role Confidence

Variable	Perceived Role Confidence	Knowledge Score	Attitude Score	Practice Score
Perceived Role Confidence	1			
Knowledge Score	**.52****	1		
Attitude Score	**.48****	**.35****	1	
Practice Score	**.61****	**.41****	**.38****	1

*Note: N = 100 for all correlations. $p < .001$

The correlation matrix shows that all KAP domains significantly correlate with confidence, with the strongest link to practice (*r*=.61). This underscores that actual clinical application is the most vital component for building confidence, more so than knowledge or attitudes alone.

DISCUSSION

The findings of this study illuminate a critical pathway for enhancing diabetes care, revealing that a physiotherapist's confidence is not an innate trait but a quality built upon a foundation of competence. The strong, positive correlation between composite KAP scores and perceived role confidence directly echoes findings from studies on other health professionals, confirming that knowledge, attitudes, and practices are fundamental pillars of professional self-efficacy (Wang et al., 2025; Hu & Jiang, 2024). This connection underscores a universal truth in healthcare: confidence is rooted in perceived capability.

However, the discovery of a "know-do" gap, where practical application scores lag behind theoretical knowledge, presents the most significant insight. This mirrors challenges observed in patient populations, where knowledge alone fails to translate into consistent self-management behaviors (Liang et al., 2025; Mekonnen & Hussien, 2021). For our physiotherapists, this suggests that university curricula and continuing education may be successfully transmitting information but failing to fully bridge the gap into confident clinical execution. The particularly strong link between practice scores and confidence confirms that true self-efficacy is forged through successful hands-on experience.

Furthermore, the influence of demographic variables cannot be overlooked. The significant rise in confidence with increasing years of experience demonstrates that on-the-job learning and repeated mastery experiences are irreplaceable. This cumulative effect highlights the value of clinical mentorship for early-career professionals. The gender-based difference in confidence, while unexpected, suggests that social or experiential factors may uniquely shape professional self-perception, warranting deeper qualitative exploration. Ultimately, these results argue for a shift in training focus from passive knowledge transfer to active, supervised clinical practice and mentorship programs, ensuring physiotherapists are not just knowledgeable but also empowered to apply their skills effectively.

CONCLUSION

This study conclusively demonstrates that the perceived role confidence of physiotherapists in managing Type 2 Diabetes is intrinsically linked to their composite knowledge, attitudes, and practices. The findings reveal a particular vulnerability in the transition from theoretical understanding to consistent clinical application, with practical skills emerging as the strongest predictor of confidence. Furthermore, confidence is not static; it evolves with clinical experience and can be influenced by demographic and professional factors. These insights lead to clear and actionable recommendations. To bridge the identified "know-do" gap, professional bodies and educational institutions must move beyond traditional lectures.

The focus should shift towards implementing structured mentorship programs for early-career physiotherapists and developing hands-on, scenario-based training workshops that simulate the complexities of diabetic care. Future research should longitudinally track confidence development from graduation through early practice to identify critical intervention points. Qualitative investigations are also needed to explore the lived experiences and contextual barriers, such as workplace culture and interdisciplinary dynamics that either foster or hinder a physiotherapist's sense of efficacy. By acting on these recommendations, the healthcare system can strategically cultivate a more confident and clinically effective physiotherapy workforce, ultimately improving the standard of care for the growing population with diabetes.

REFERENCES

Alaofè, H., Hounkpatin, W. A., Djrolo, F., Ehiri, J., & Rosales, C. (2021). Knowledge, attitude, practice and associated factors among patients with type 2 diabetes in Cotonou, Southern Benin. *BMC Public Health*, *21*(1), 339.

Albishi, E. M. M., Hatamihattan, R. A., AlBannaa, R. M. H., Kuzay, S. A. I., Alrithi, T. Y. M., Alnames, Z. A. M., ... & Ahmed, A. M. (2024). Healthcare Workers' Knowledge, Attitude And Practices Towards The Care For Patients With Type 2 Diabetes Mellitus In Saudi Arabia: Narrative Review. *Journal of International Crisis and Risk Communication Research*, *7*(S9), 1799.

Aldoais, T., Al-Mekhlafy, A., Khaled, L. A., Al-Hattami, L., Alsharabi, N., Al-Areqi, H. M. A., & Alzomor, B. (2025). Knowledge, Attitudes and Practices Regarding Diabetes-Related Ocular Complications among Type 2 Diabetics in Sana'a City, Yemen. *University of Science and Technology Journal for Medical Sciences*, *3*.

Badran, A., Bahar, A., Tammam, M., Bahar, S., Khalil, A., Koni, A. A., & Zyoud, S. E. H. (2023). The relationship between diabetes-related knowledge and kidney disease knowledge, attitudes, and practices: a cross-sectional study. *BMC Public Health*, *23*(1), 480.

Basaqr, R. O., Albajri, E. A., Khan, M. A., Naseeb, M. A., Altasan, A. A., Alshihabi, R. A., ... & Khan, M. I. (2025). Assessing knowledge, attitude, and dietary practice in association with prediabetes risk using objective clinical markers among Saudi adult population: A cross-sectional study. *Medicine*, *104*(16), e42172.

Dela Mata, M. S. (2022). Knowledge, attitude, and practices in managing type 2 diabetes mellitus among outpatient adults in San Pedro City, Laguna.

Dera, A. A. (2025). Assessment of School Staff Knowledge, Attitudes, and Practices Regarding the Management and Support of Diabetic Students in the Aseer Region, Saudi Arabia. *King Khalid University Journal of Health Sciences*, *10*(1), 56-65.

Hamshari, S., Hamadneh, S., Ajlone, A. M., Mashni, A. W., & Jubeh, M. A. (2025). Knowledge, attitude, and practice (KAP) of primary health physicians towards glucose self-monitoring in patients with type2 diabetes mellitus in Palestine. *BMC Primary Care*, *26*(1), 33.

Hu, L., & Jiang, W. (2024). Assessing perceptions of nursing knowledge, attitudes, and practices in diabetes management within Chinese healthcare settings. *Frontiers in Public Health*, *12*, 1426339.

Hu, X., Zhang, Y., Lin, S., Guo, X., Yang, D., Cai, M., & Gao, L. (2021). Dietary knowledge, attitude and practice (KAP) among the family members of patients with type 2 diabetes mellitus (T2DM) and its influence on the KAP of T2DM patients. *Diabetes, Metabolic Syndrome and Obesity*, 205-213.

Kwak, G., Gardner, K., Bolaji, B., Franklin, S., Aung, M., & Jolly, P. E. (2021). Knowledge, attitudes and practices among healthcare professionals regarding complementary alternative medicine use by patients with hypertension and type 2 diabetes mellitus in Western Jamaica. *Complementary therapies in medicine*, *57*, 102666.

Li, X., Shi, Y., Wei, D., Gong, Y., Yan, X., & Cai, S. (2024). Knowledge, attitude, and practice toward weight management among diabetic patients in Qidong City, Jiangsu Province. *BMC Public Health*, *24*(1), 922.

Liang, Y., Liu, Q., Sun, X., & Wang, Y. (2025). Why patients' knowledge alone isn't enough: examining behavioral and attitudinal gaps in gestational diabetes management among Chinese women. *Frontiers in Public Health*, *13*, 1589416.

Maduemezia, U., Variava, E., Moloantoa, T., Abraham, P., Rambau, B., Ndaba, T. S., ... & Daya, R. (2024). Knowledge, attitude, and practices related to diabetes among patients with type 2 diabetes mellitus at Tshepong Hospital. *Journal of Endocrinology, Metabolism and Diabetes of South Africa*, *29*(3), 100-111.

Maduemezia, U., Variava, E., Moloantoa, T., Abraham, P., Rambau, B., Ndaba, T. S., ... & Daya, R. (2024). Knowledge, attitude, and practices related to diabetes among patients with type 2 diabetes mellitus at Tshepong Hospital. *Journal of Endocrinology, Metabolism and Diabetes of South Africa*, *29*(3), 100-111.

Mekonnen, Y., & Hussien, N. (2021). Self-care related knowledge, attitude, and practice and associated factors among patients with type 2 diabetes in JMC, Ethiopia. *Diabetes, Metabolic Syndrome and Obesity*, 535-546.

Mohamed, A. H., Abbassi, M. M., & Sabry, N. A. (2024). Knowledge, attitude, and practice of insulin among diabetic patients and pharmacists in Egypt:"cross-sectional observational study". *BMC Medical Education*, *24*(1), 390.

Patel, R. D., & Patel, H. V. (2024). Assessment of Knowledge, Attitude and Practice and Medication Adherence of Type-2 Diabetes Mellitus Patients: A Cross Sectional, Observational, Community Based Survey from Gujarat, India. *Indian Journal of Pharmacy Practice*, *17*(3), 249-260.

Sakeus, J. (2022). Knowledge, attitudes and practice of patients diagnosed with diabetes regarding diabetic self-care management in intermediate Rundu hospital, Kavango east region (Doctoral dissertation, University of Namibia).

Sari, Y., Anam, A., Sumeru, A., & Sutrisna, E. (2021). The knowledge, attitude, practice and predictors of complementary and alternative medicine use among type 2 diabetes mellitus patients in Indonesia. *Journal of Integrative Medicine*, *19*(4), 347-353.

Teoh, K. W., Ng, C. M., Chong, C. W., Bell, J. S., Cheong, W. L., & Lee, S. W. H. (2023). Knowledge, attitude, and practice toward pre-diabetes among the public, patients with pre-diabetes and healthcare professionals: a systematic review. *BMJ open diabetes research & care*, *11*(1).

Wang, Q., Miao, G., Miao, S., Li, P., & Chen, J. (2025). Knowledge attitudes and practices of healthcare professionals regarding diabetes self management education and support. *Scientific Reports*, *15*(1), 21163.