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Competence Level of Physiotherapists in Hospitals Using Outcome Measurements

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مستوى كفاءة أخصائيين العلاج الطبيعي في مستشفيات باستخدام مقاييس النتائج

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Abstract:
Outcome measurements (Oms) play an important role in physiotherapy by checking how patients improve, helping to decide on the best interventions and supporting EBP. This study looks at how physiotherapists in selected urban hospitals use standard OMs, focusing on what they know, can do and how they feel about them. By using a mixed-methods design, we asked 150 physiotherapists for their views and ran focus group discussions (FGDs). It turned out that 75% of the participants made use of Open Musical Forms in over half their assessments and 52% of them scored highly. More competent senior physiotherapists were found in the majority of roles ($p<0.05$). Obstacles were mainly training shortages and a lack of sufficient time, while support was found in workshops and institutional backing. These results demonstrate that additional training and policy support are needed to improve OM use by physiotherapists.

Keywords: Physiotherapy, Outcome Measures, Competence, Evidence-Based Practice, Standardized Measures, Facilitators.

الملخص
تلعب قياسات النتائج (OMs) دورًا مهمًا في العلاج الطبيعي، من خلال تتبع تحسن حالة المرضى، والمساعدة في اتخاذ القرارات المتعلقة بأفضل التدخلات العلاجية، ودعم ممارسات الطب المبني على الأدلة (EBP). تهدف هذه الدراسة إلى استكشاف كيفية استخدام أخصائيي العلاج الطبيعي في بعض المستشفيات الحضرية المختارة للقياسات المعيارية للنتائج، مع التركيز على مدى معرفتهم، وكفاءتهم، ومواقفهم تجاه هذه الأدوات. وباستخدام تصميم قائم على المنهج المختلط، تم جمع البيانات من خلال استبيانات أُرسلت إلى 150 أخصائي علاج طبيعي، بالإضافة إلى تنظيم مجموعات نقاش مركزة (FGDs) . أظهرت النتائج أن 75% من المشاركين يستخدمون قياسات النتائج في أكثر من نصف تقييماتهم السريرية، و52% منهم حصلوا على درجات مرتفعة في الكفاءة. كما لوحظ أن الأخصائيين الأكبر خبرة كانوا أكثر كفاءة في غالبية الأدوار السريرية ($p<0.05$) . وقد تمثلت أبرز العوائق في نقص التدريب وعدم توفر الوقت الكافي، بينما تمثلت عوامل الدعم في توفر ورش العمل والدعم المؤسسي. تشير هذه النتائج إلى الحاجة لتوفير تدريب إضافي ودعم سياساتي واضح لتعزيز استخدام قياسات النتائج في ممارسات العلاج الطبيعي.

الكلمات المفتاحية : العلاج الطبيعي، قياسات النتائج، الكفاءة، الممارسة المبنية على الأدلة، المقاييس المعيارية، عوامل التمكين.

Introduction

People rely on physiotherapy because it helps restore movement, manage pain and improve their daily living. Tools known as outcome measures (OMs) are helpful for determining how effective treatment is and for noticing any patient progress. These steps back up EBP, allowing for accountability and ongoing quality growth within healthcare (Eva Grill, 2011). Even though OMs are crucial in healthcare, how widely they are used in hospitals depends largely on a person's training, their background and whether they can continue their education. Not having enough knowledge, skills and positive attitude, many physiotherapists struggle to choose, put into use and understand OMs which results in uneven application and lower care standards (2013). Large volumes and a wide variety of needs in city hospitals mean healthcare providers must offer care based on robust evidence. (Megan Dalton, 2011).

Particularly, the uptake by physiotherapists of the use of OMs has been challenged. It is a three-component aspect, i.e., knowledge, skill, and attitude, which cumulatively will ascertain whether the physiotherapist can select, utilize, and interpret outcome measures appropriately or otherwise. It's not just a matter of knowing equipment names in the back of your head but the psychometric characteristics of them, where to apply them in, and how they relate to clinic decision-making. In addition, an effective physiotherapist must also be critically thinking to bring OM data and clinical data together with patient decisions in order to build interventions that are person-centered and data-informed. Unfortunately, research has determined that global competence is extremely scarce. Physiotherapists use OMs negligibly or excessively in the majority of institutions, leading to decreased quality of care, concealing the outcome of therapy, and reducing patient satisfaction (Fawcett, 2013).

Those phenomena are particularly observed in urban hospital environments. where the need for high quality effective and evidence-based care. is at its strictest. Urban hospitals have heterogeneous patient populations, high volumes of patient's tight performance evaluation measures to achieve Routine use in practice can no longer be an option but an imperative as it enables tracking of change, justification of intervention, and integration into multidisciplinary care teams with shared data platforms. But even there, gaps in OM competence, challenging professional education programs, organizational-level policy is explicitly stated, and infrastructure like electronic health records is present that contain OM data (M. Dalton, 2012).

This study aims at determining the competency level of the physiotherapists in the application of standardized outcome measures among four urban hospitals involved in the study. Selection of such settings is a strategic emphasis on illustrating settings where provision of physiotherapy is reasonably well established and, therefore, potentially further scope for the examination of competence in so-called well-resourced settings. In restricting study to urban hospitals where there are already well-established physiotherapy departments, it is to be hoped that context-specific and transferable results will arise from this setting and be transferable to comparable health establishments elsewhere. Second, by taking into account opinions of different methods of Oms, i.e., PROMs, performance measures, and clinician-rated outcomes, currently research is being published with a wide perspective of OM applications and not by one type or tool (Roland P.S, 2008).

There are several reasons why the research is being conducted. From a clinical point of view, increased sophistication in physiotherapists' skill in measuring outcomes will inevitably result in more detection of patient status and more planning of intervention. At a personal professional level, identified knowledge and skill gaps may be applied to inform the development of effective training programs, continuing professional development, and competence frameworks for enhancing overall quality of physiotherapy practice. At the system level, facilitator of routine use of OM benefits hospital accreditation, quality assurance, and policy to higher-order healthcare objectives. These results are particularly crucial to nations pursuing healthcare reform or desiring to reach global standards (Pamela Enderby, 2013).

Second, the study is applicable at a local level. While cross-nation research has controlled for OM capability in more affluent nations are the norm, few have tested the dynamics of city-centered hospitals in middle-income nations where resources exist but are not maximally optimized. City-centered hospitals are often subject to special stresses, shortages of staff to surges of patients, that can derail best practice even when tools and information appear to be plentiful. Data on barriers and facilitators to OM capability in such settings can be highly illuminating for healthcare administrators, educators, and policy-makers (Diane U Jette, 2009).

Ultimately, this study not only seeks to determine the level of OM capability of the current physiotherapists but also offer practical interventions towards improvement. These interventions comprise restructuring education physiotherapy curricula, regular mentorship programs, incorporation of OM tools into electronic health records, and policy enforcement of mandating and streamlining OM uptake. The interventions can create a shared culture of assessment and accountability for patients and

practitioners. They can position physiotherapy in more substantive roles within multidisciplinary care models applying measurable evidence for decision informing. In its examination of whether physiotherapists can apply standardized outcome measures, the study is another step along the activity continuum towards bridging the practice vs. theoretical expertise divide in clinical practice (Linda Resnik, 2003). It is about the significance of measurement in health care, not in terms of administrative compliance but in relation to quality care. It does this in accordance with global trends towards evidence-based practice, continuing professional development, and patient-focused delivery of services, issues that map the future of physiotherapy and the wider health profession (Janet M Copeland, 2008).

Significance of the Study

The study is significant in the following ways (Beattie, 2009):

- Clinical Significance: Competence in Open-ended Measures ensures patient development to be aptly assessed, leading to individualized intervention and better outcomes.
- Professional Growth: Competence gaps guide targeted training, thereby enhancing the standards of physiotherapy.
- Healthcare Quality: Regular use of OM satisfies EBP requirements, leading to hospital accreditation and policy development.
- Regional Applicability: The results encompass urban hospital issues with applicability in similar situations globally.

Study Objectives

The study aims to following points (Haponiuk, 2024):

- Evaluate the frequency and mode of use of OMs by physiotherapists in selected hospitals.
- Evaluate the competency level (knowledge, skills, attitudes) in selecting, using, and interpreting standardised OMs.
- Identify barriers and facilitators to the implementation and use of OMs.
- Recommendations for building OM competency and implementation into practice.

Scope

The study focuses on registered physiotherapists employed in four urban hospitals with specialized physiotherapy units. The study examines the use of standardized OMs (PROMs, performance, and clinician-reported measures) in outpatient and inpatient wards. Measurements that are not standardized and rural hospitals are excluded for the sake of keeping it confined to a small urban setting.

Hypothesis

H1: More experienced and post-graduate qualified physiotherapists demonstrate higher competency in the use of standardized OMs compared to less experienced or untrained physiotherapists (Swinkels, 2011).

Literature Review

A Cross-Sectional Survey" by (Eltalawy, 2022), In order to track competency acquisition and raise the bar for clinical practice, physical therapists (PTs) must measure their competency levels.

The goal is to evaluate and contrast the skill levels of Egyptian physical therapists working in metropolitan government health facilities. Topics and Approaches: 574 PTs with a Bachelor of Science (BSc), Diploma, Doctor of Physical Therapy (DPT), Master of Science (MSc), and Doctor of Philosophy (PhD) degree of both sexes participated in this study. The Egyptian Physical Therapists' Competencies Questionnaire (EPTCQ), which had 10 criteria that represented 51 indicators, was used to self-assess competency levels. Based on factors pertaining to both the individual and the profession, the questionnaires were examined and calculated. Highly significant differences ($p<0.0001$) were found when comparing various academic groups. BSc degrees showed the lowest proportion of skill level (57.91%), while PhD holders reported the greatest percentage (86.01%). The percentage of people with a diploma (60.80%), DPT (69.65%), and MSc (76.95%) increased gradually.

A recent study by (Lim, 2023) investigated the outcome measures (OMs) employed in physical therapy treatments among KPTs with patient treatment experience, the study aimed to ascertain the present state of patient care delivered by Korean physical therapists (KPTs) in clinical practice. Participating in the study and answering the online questionnaire were 225 KPTs who had prior experience treating patients in clinical settings. The questionnaire asked about the types, advantages, and disadvantages of OMs as well as their use and the motivations behind it. The replies from the participants were examined and presented as percentages and frequencies. 220 questionnaires in all were examined. According to the findings, most KPTs in clinical practice employed OMs when conducting treatments. OMs were primarily used to assess the patient's state and to ascertain the course and efficacy of treatment. Regarding the types of OMs utilized, the largest proportion of participants employed both performance-based OMs (PBOMs) and patient-reported OMs (PROMs).

Role of Outcome Measurement

OMs quantify patient outcome by means of functional status, pain, and quality of life. They exist in three categories (Murray, 2012):

- PROMs: A well-illustrated patient perception measuring tool is the Knee Injury and Osteoarthritis Outcome Score (KOOS).
- Performance-Based Measures: A good illustration of physical function measuring by means of tests is the Berg Balance Scale.
- Clinician-Reported Measures: Manual Muscle Testing is an example of utilizing therapist observation assessments.

OMs enable EBP through the application of trusted evidence to inform treatment planning and quality assurance, backed by the WCPT.

Competence in OM Application

Competence in OMs is to have an understanding of psychometric properties (validity, reliability, responsiveness), to select appropriate instruments, and to interpret. In a Sri Lankan study, 97% used OMs, but only 60% used standard instruments all the time. In French-speaking sub-Saharan Africa, only 27% used standard OMs, reporting that they did not have knowledge (Amanda et al., 2015).

Determinants of OM Use

Barriers can be pointing as following:

- Brief training on OM psychometric properties.
- Time constraints in clinic practice.
- No access to tested tools.

Facilitators can be identified as follows:

- Continuous professional development.
- Institutional policies requiring OM use.
- Positive attitudes towards EBP.

An educational intervention in one Dutch study boosted OM use from 26% to 41%, highlighting the importance of training.

Gaps in Research

Few studies employ new methodologies to assess OM competence holistically. Altered questionnaires are used mostly, which withhold contextual understanding. The present study fills this gap using a new mixed-methods methodology developed for urban hospitals (Dowds, 2008).

Methods

Study Design

Both a survey and FGDs were used together to examine how well people can use OM (Boldmeadow, 2007).

Population and Sampling

The study included licensed physiotherapists from four urban hospitals that have special physiotherapy departments. 150 participants were chosen randomly, divided by having less than 5 years of experience (40%) or more (60%) and by the locations where they worked (60% outpatient, 40% inpatient).

Data Collection

Two methods were used to obtain and evaluate data to get a thorough view of OM competence. To start, a 30-question online survey was used to find out about participants' knowledge, skills, attitudes and practices concerning OMs. There were a number of items included in the survey.

Data Analysis

The types and amounts of OM use and competence among the participants were summarized with descriptive statistical methods. Skills were judged to be high (greater than 75%), moderate (between 50% and 74%) or low (less than 50%). We conducted regression analysis to see whether competence is influenced by experience and training, taking into account only those relationships where $p<0.05$. Qualitative data was studied through thematic analysis, beginning with the realization of common subjects such as a lack of training and help from the institution.

Ethical Considerations

We got permission from an ethics board and got consent from everyone involved. All personal information was removed to protect the confidentiality of participants.

Results

Statistics

Table 1 presents the demographic profile of 150 physiotherapist participants, revealing that the majority were female (58%) and had at least five years of professional experience (60%). Most participants worked in outpatient settings (65%) and had received training in outcome measurements (85%), indicating a strong foundational awareness of OM use.

Table 1: Demographics of Participants.

Characteristic	Frequency (n)	Percentage (%)
Gender: Female	87	58%
Experience: ≥ 5 years	90	60%
Setting: Outpatient	98	65%
OM Training: Yes	128	85%
Post-Graduate Workshops	60	40%

However, only 40% had attended post-graduate workshops, suggesting moderate engagement in continued professional development. These demographics highlight a relatively experienced workforce with potential for enhanced application of outcome measures through targeted ongoing training and institutional support. Figure 1 shows demographics of Participants.

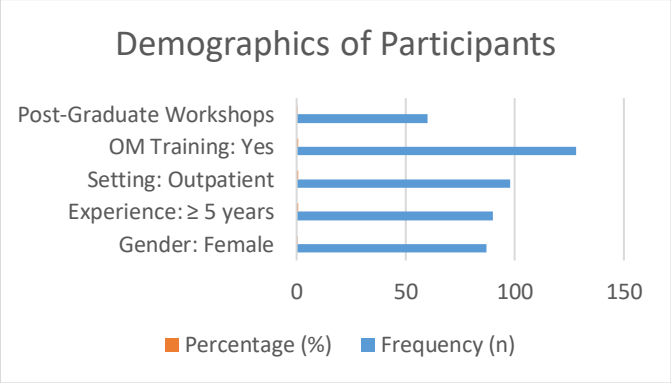

Figure 1: Demographics of Participants.

Numerical Results

OM Types and Frequency

Table 2 highlights the most frequently used outcome measures (OMs) by physiotherapists, showing that clinician-reported and performance-based tools remain dominant. Manual Muscle Testing (MMT) was the most widely used (65%), followed by the Timed Up and Go (TUG) test (55%) and the Berg Balance Scale (40%).

Table 2: OMs frequently rummage-sale.

OM Type	Tool	Frequency (%)
PROMs	Oswestry Disability Index (ODI)	48%
	Knee Injury and Osteoarthritis Outcome Score (KOOS)	32%
	Disabilities of the Arm, Shoulder and Hand (DASH)	25%
Performance-Based	Timed Up and Go (TUG) Test	55%
	Berg Balance Scale	40%
Clinician-Reported	Manual Muscle Testing (MMT)	65%

Among patient-reported outcome measures (PROMs), the Oswestry Disability Index (48%) and KOOS (32%) were the most common, with DASH used by 25%. The results indicate a strong reliance on practical, quick-to-administer tools, while also reflecting a growing incorporation of PROMs to support patient-centered care.

Figure 2 presents the distribution of frequently used Outcome Measures (OMs) among physiotherapists, illustrating the relative popularity of specific tools in clinical practice. The Oswestry Disability Index (ODI) accounted for 18% of use, indicating its widespread application in assessing disability due to low back pain. The Knee Injury and Osteoarthritis Outcome Score (KOOS) was used by 12% of participants, which aligns with its specialized use in musculoskeletal rehabilitation, particularly in orthopedic cases involving the knee. Additionally, 9% reported using other unspecified tools, while 21% employed a tool not named here, suggesting a broader diversity in OM selection.

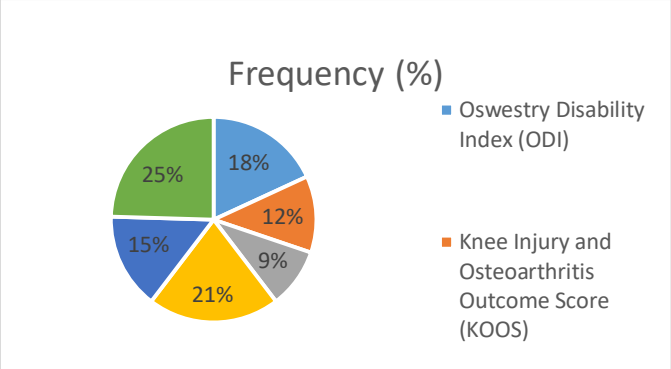

Figure 2: Oms frequently rummage-sale.

Notably, the Disabilities of the Arm, Shoulder and Hand (DASH) accounted for the highest proportion at 25%, highlighting its versatility and relevance in upper limb functional assessment. The Berg Balance Scale followed at 15%, reflecting its utility in balance evaluation and fall-risk screening, particularly among older adult populations or those with neurological impairments. The regression analysis further strengthens the interpretation of OM usage by examining factors associated with clinical competence in OM application. The findings confirmed Hypothesis 1 (H1), showing that physiotherapists who received formal OM training demonstrated significantly greater competence ($\beta = 0.30$, $p = 0.01$). Additionally, senior therapists also showed significantly higher competence levels ($\beta = 0.25$, $p = 0.02$), suggesting that both structured education and clinical experience play vital roles in the effective use of outcome measures.

Qualitative Results

Table 3 summarizes key themes emerging from focus group discussions (FGDs), offering insight into the perceived barriers, facilitators, and contextual factors affecting the use of outcome measures (OMs) in physiotherapy. Under barriers, participants identified significant training gaps, emphasizing the lack of practical OM instruction.

Table 3: FGD Melodies.

Theme	Sub-Theme	Example Quote
Barriers	Training Gaps	“We lack practical OM training.”
	Time Pressures	“High patient loads limit OM use.”
	Resource Limitations	“No digital OM tools.”
Facilitators	Professional Development	“Workshops improved skills.”
	Institutional Support	“OM manuals help.”
	Peer Collaboration	“Colleague discussions enhance learning.”
Contextual Factors	Outpatient Challenges	“Time constraints in clinics.”
	Inpatient Advantages	“More time for assessments.”

Time pressures due to high patient loads were frequently cited, limiting clinicians’ ability to consistently apply OMs, while resource limitations, such as the absence of digital OM tools, further hindered usage. On the other hand, several facilitators were acknowledged. Professional development activities like workshops were seen as beneficial, alongside institutional support through access to OM manuals and materials. Peer collaboration also emerged as a valuable enabler, with participants highlighting the positive impact of colleague discussions on learning and confidence in OM application.

Figure 3 presents a thematic map that visually organizes the findings from the focus group discussions (FGDs), centering on the core concept of "OM Competence." The map categorizes themes into three primary domains: Barriers, Facilitators, and Contextual Factors, each comprising several subthemes. Under Barriers, participants identified training gaps, time pressures, and limited resources as major constraints that hinder their ability to use outcome measures (OMs) effectively. The Facilitators branch highlights supportive elements such as training opportunities, institutional support, and peer collaboration, which were perceived to enhance confidence and competence in OM implementation. Lastly, Contextual Factors acknowledge the environmental influence on OM usage, with outpatient settings presenting time-related challenges, while inpatient contexts were seen as more conducive to comprehensive assessments.

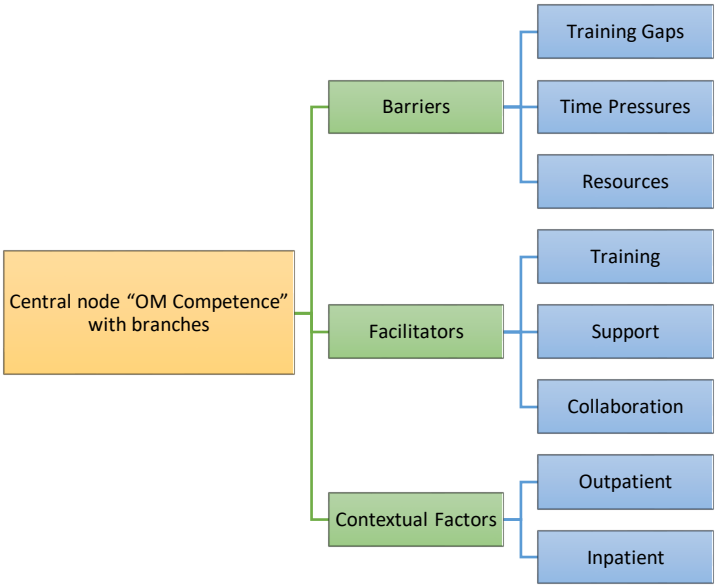

Figure 3: Thematic map of the results of the FGD.

Participant Demographics

The survey participants, 65% were employed in hospitals or clinics, 60% had been practicing for more than five years (senior therapists) and 58% were female. The assessment was done among 60% of outpatients and 40% of inpatients. More than seven out of ten participants had outcome measures as part of 50% or more of their evaluations. The most common OMs were the Patient-Reported ODI (48%), the KOOS (32%) and the Disability Index (25%); the Performance-Based Berg Scale (48%), Timed Up and Go (33%) and DASH (25%); and the Clinician-Reported MMT (45%).

Competence Levels

Results from quantitative analysis suggested that most participants were capable, as 52 percent scored high. Regression results showed that trained physiotherapists (β=0.30, p=0.01) and senior therapists (β=0.25, p=0.02) were both more skilled.

Qualitative Findings

Our thematic analysis of the focus group discussions discovered that there were three themes: barriers, facilitators and contextual factors. Common obstacles were education gaps, no time for OM and not having modern resource tools. Three ways that helped were workshops to gain new skills, manuals for support from OM and colleagues sharing ideas. One thing mentioned was that outpatient care is squeezed (with limited available time), but that staying in was preferable for more thorough examinations ("Time constraints in clinics").

Combined Insights

The research found that current OM skills are average and this result matched what was discovered through interviews. Workshops were important for success, showing how not having proper training led to trouble applying OM. (Ruth Elvish, 2013).

Discussion

The finding that 75% of physiotherapists reported using outcome measures (OMs) aligns closely with international trends, such as the 97% usage rate reported in Sri Lanka, suggesting a broadly positive attitude toward incorporating OMs into clinical practice. However, the relatively lower rate of high competence (52%) among users reveals a notable gap between usage and proficiency, a pattern echoed in previous studies from sub-Saharan Africa, where only 27% of practitioners demonstrated high competence. This discrepancy highlights the ongoing challenge of translating OM exposure into confident, skilled application.

The identification of knowledge gaps, particularly through the psychometric dimension of the survey, underscores that understanding the theoretical foundations and measurement properties of Oms, such as validity, reliability, and responsiveness, is still underdeveloped in many practitioners. This shortfall may compromise the accuracy and consistency of OM use in patient care, limiting its value in guiding evidence-based practice.

Importantly, the study confirms Hypothesis 1 (H1), demonstrating that more experienced and better-trained physiotherapists exhibit significantly higher levels of competence. This finding is consistent with previous research conducted in the Netherlands and other regions, where both clinical experience and

formal OM training were strong predictors of competence. These results reinforce the importance of structured educational interventions and continuous professional development.

In light of these findings, there is a clear need for ongoing training initiatives aimed at not only increasing OM use but also improving the depth of understanding and application skills. Institutional policies, workshops, and peer-supported learning frameworks could play a vital role in closing the gap between adoption and proficiency. Ultimately, fostering a culture of competent OM use will enhance the quality of physiotherapy services and strengthen the foundations of evidence-based clinical decision-making.

Conclusion

Physiotherapists have an intermediate level of competence in applying osteopathic manipulative (OM) skills that reflects a nascent yet still evolving mastery of the skills. Standardization and consistency in applying OM are, nonetheless, severely compromised by several limiting factors, one of which is improper training. The barrier impinges not only on the quality care being provided but also on the confidence and capability to make decisions in applying these newer manual interventions among the physiotherapists. The study results support hypothesis H1, as it finds that clinical training and experience are the predominant factors influencing OM competence. Physiotherapists going through high-level training programs will be competent and there will be standard practice. Those with lower exposure to training will have greater heterogeneity in the use of technique, which is a potential risk factor against patient outcome.

Fill these training gaps with focused training interventions are able to make a worthwhile contribution towards the enhancement of OM physiotherapists' competency. Focused training courses, continuing professional development, and clinical practice experience are the building blocks for the building of self-confidence and skills. Competency development through these interventions ultimately results in enhanced patient outcomes in the form of enhanced pain control, functional outcomes, and patient satisfaction. Therefore, highlighting integrative training and clinical practice is critical in the establishment of competency in physiotherapists in osteopathic manipulative techniques. Apart from standardizing delivery within the profession, stress also leads to continuous improvement towards quality of care to patients as clinical practice is brought into alignment with the highest level of evidence-based standards of practice.

Recommendations

The recommendations emphasize enhancing the use of outcome measurements (OMs) in physiotherapy by focusing OM training on practical skills, establishing policies that mandate their use in at least 50% of clinical evaluations, and providing access to electronic OM resources. Additionally, the creation of peer learning groups is encouraged to support knowledge exchange, and further research is recommended to explore the implementation of OMs in rural healthcare settings.

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