

# Barriers and Facilitators to Outcome Measure Utilisation among Physiotherapists: A Scoping Review

PANKAJPREET SINGH<sup>1</sup>, SUPREET BINDRA<sup>2</sup>, RICHA<sup>3</sup>

## ABSTRACT

**Introduction:** Outcome Measures (OMs) are standardised tools used to determine a patient's current health status regarding impairment, activity limitation, participation and quality of life. They are a key component of Evidence-based Practice (EBP). There is diverse evidence on the factors that influence physiotherapists' decisions regarding the usability of OM from a clinical point of view and the choice of OMs in clinical settings. In the present study, a scoping review was performed to analyse the currently available evidence on physiotherapists' use of OMs. The review focused on facilitators and barriers to implementing OMs in clinical practice.

**Aim:** To evaluate the utilisation of OMs by physiotherapists and to determine barriers and facilitators related to their use.

**Material and Methods:** A scoping review was conducted at the Department of Physiotherapy, Sri Guru Granth Sahib World University, Punjab, India in January 2025. A comprehensive search was conducted in online databases, including PubMed and CINAHL. Keywords related to "OMs", "Facilitators", "Barriers" and "Physiotherapist" were used. Only survey studies published in English from January 2006 to December 2024 were

included. Appraisal tool (AXIS) for cross-sectional studies was used for quality assessment.

**Results:** A total of 33 studies were selected. All the included studies had an AXIS score of 11 or higher. Most studies discussed barriers and facilitators for utilising OMs. A larger proportion of the studies were conducted in the Western world and on the general usage of OMs. Overall, although physiotherapists widely acknowledge the value of OMs, their routine use remains inconsistent due to persistent contextual barriers.

**Conclusion:** The present scoping review highlights that, although OMs are widely recognised as essential tools for enhancing evidence-based physiotherapy, their use remains inconsistent in clinical settings. There is a variation in the item frequency across the studies, which reflects the absence of standardised assessment tools and the diverse methodological approaches. Different studies used diverse questionnaires, different clinical populations and prioritised different domains of barriers and facilitators, resulting in heterogeneity. Moreover, there is a need to develop more evidence on the utilisation of OMs by physiotherapists in the Eastern world, and studies should be conducted on region- and condition-specific.

**Keywords:** Outcome assessment, Physical therapist, Surveys

## INTRODUCTION

Outcome Measures (OMs) are important for assessing a patient's current health status [1]. They are a key component for evidence-based practice [2]. Evidence-based practice helps to determine the effectiveness of treatments using OMs [3]. OMs are the ways of delivering treatment and observing the changes in the patient's health status before and after the treatment [4]. Results generated through OMs could be implemented for better understanding of patients' health status in treating their disease at the full length of care process, including history, physical examination, diagnosis, treatment and follow-up [5].

Nowadays, there is greater focus on patient-centered treatment to assess the level of effectiveness of treatment, reduce disability and improve quality of life [6]. These issues can be managed by OMs which can identify physical impairment, health status, pain management and patient's disability by monitoring changes in the patient's health [7,8]. Without routine outcome measurement, physiotherapists receive little input on the outcomes they achieve and their comparability with other health professionals [9]. Recording patient outcomes also enables progress, which can sometimes appear insubstantial, to be efficiently communicated to patients and also promotes efficient treatment planning.

Some of the known barriers while utilising OMs include lack of knowledge, time, cost, inadequate training, limited patient cooperation and clinical relevance, whereas common facilitators are positive attitude, familiarity, ease of administration and scoring [10]. There is diversified evidence on the factors that influence

physiotherapists' decisions regarding the examination of usability of OMs from a clinical point of view and the choice of OMs in a clinical setting [7]. These are commonly dependent on survey-based studies [10].

In the present study, a scoping review approach was chosen because it allows for a comprehensive mapping of the existing literature on the use of OMs by physiotherapists. Unlike a systematic review, which focuses on narrowly defined questions, a scoping review helps to identify the breadth and depth of available evidence, clarify key concepts, and highlight gaps in research and practice. Given the wide variation in clinical settings, populations, and types of OMs used, this method was best suited to capture the diverse factors influencing the utilisation of OMs and to provide a foundation for future, more focused investigations.

The focus of the review was kept on facilitators and barriers in implementing OMs in clinical practice. This enables clinicians and researchers to find it easier to consult on the use of OMs; facilitators and barriers; qualifications, characteristics of physiotherapists; commonly examined conditions; and least targeted conditions. Hence, the present scoping review aimed to evaluate the utilisation of OMs by physiotherapists and to identify the barriers and facilitators that influence their implementation in clinical practice.

## MATERIALS AND METHODS

**Research question:** What OMs are currently used by physiotherapists, and what factors facilitate or hinder their utilisation in clinical practice?

Comprehensive and systematic searches were developed by three researchers. The research was conducted in January 2025 using the following databases: PubMed (MEDLINE) and CINAHL, listed in [Table/Fig-1]. Electronic databases searched for keywords and retrieved articles. The time-limit was set between January 2006 to December 2024. Articles published in English were considered eligible. Additional papers were included from citation tracking.

| Name of database | Keywords searched   | Retrieved studies |
|------------------|---|-------------------|
| PubMed           | ("Physiotherapists" [Mesh] OR "physiotherapist" [title/abstract] OR "Physical therapist" [title/abstract] OR "physiotherapists" [title/abstract]) AND ("Outcome Measures" [Mesh] OR "Outcome Measures" [title/abstract] OR "outcome measures" [title/abstract]) AND ("Barriers" AND ("Facilitators")) | 469               |
| CINAHL           | Outcome Measures, Physical therapist, Barriers, Facilitators  | 126               |

[Table/Fig-1]: Electronic databases, searched keywords and retrieved articles.

The study utilised the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews (PRISMA-ScR) guidelines to guide the study selection process, which included searching, screening, and including relevant studies worldwide. The search was limited to articles published in English.

Inclusion criteria consisted of studies that surveyed physiotherapists regarding their use of OMs, while exclusion criteria comprised studies that employed surveys unrelated to OMs. Literature selection was independently performed by three researchers, and any disagreements were resolved through discussion and consensus with the other researchers.

The framework refined by the Joanna Briggs Institute (JBI) guidelines was used to ensure transparency and methodological rigour.

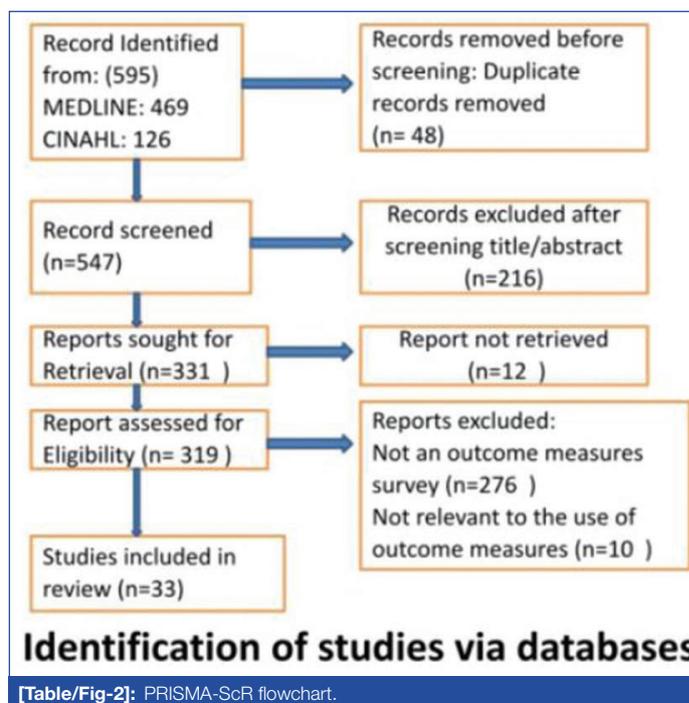
In the present review, the authors used AXIS for quality appraisal of studies. The AXIS tool is a validated 20-item checklist specifically designed for cross-sectional studies, covering key domains such as study design, sample selection, measurement validity, statistical analysis, reporting, and ethical considerations. Using this tool allowed for a systematic, transparent assessment of study quality, helping to identify potential sources of bias and supporting a more informed interpretation of the review findings. A cut-off (>11) was used to scrutinise studies, scoring above half of the total. This method was also adopted by Lim J et al., Down MJ et al., and Bull C et al., [7, 11, 12]. Evaluation results were divided into four tiers using the classification method found in the literature: Axis score of 16 or higher, 10-15, 5-9 and 4 or lower [7, 11, 12].

Relevant titles and abstracts were screened based on the predefined inclusion and exclusion criteria. Full-text articles were independently assessed by three reviewers, and any disagreements were resolved through discussion with the other researchers.

Data were extracted from the included studies and recorded in a predefined Excel form, capturing details such as first author, year of publication, survey development, country, sample size, survey method, type of outcome measure, and condition-specific information. The data extraction form was updated once during the process to ensure accuracy, in accordance with scoping review methodology. The final data are presented in tabular format.

## RESULTS

Following the initial search, studies extracted from the databases were reviewed in successive stages. After assessing the full-text articles deemed eligible in the final round of evaluation, 33 studies met the inclusion criteria and quality standards based on the AXIS tool [Table/Fig-2]. The search for studies on the use of OMs by physiotherapists yielded a total of 595 articles retrieved from two



databases: MEDLINE and CINAHL. After the removal of 48 duplicate records, 547 articles remained for title and abstract screening. Among them, 12 articles were excluded due to the unavailability of full text. Subsequently, 276 articles were excluded for irrelevance to OMs, and 10 studies were found not relevant to the use of OMs. Ultimately, 33 studies were included in the review.

Over 6,000 physiotherapists were evaluated across the 33 included studies [4,13-44], with sample sizes ranging from 15 to 1,064 participants [17,23]. Of the 33 studies, five used mailed surveys [13,14,15,17,22], one was a focus group interview [34], one applied a mixed-methods design [37], and 26 were conducted online [Table/Fig-3][4,13-44].

Total of 28 studies developed their own questionnaires, while five adapted existing validated tools [13,21,23,24,25]. Three studies included physiotherapists along with other healthcare professionals [20,33,40], whereas 30 surveyed only physiotherapists.

Questionnaire validity was assessed in nine studies [4,13,16,27,29,34,35,39,40], and two were conducted following a literature review [19,28]. Additionally, three studies examined EBP among physiotherapists [13,18,23], while more recent research (2013-2024) focused on Performance-Based OMs (PBOMs) and Patient-Reported OMs (PROMs) [20,26,31-33,35,36,39,41,43]. The trends indicate that the majority of the included studies were conducted in the Western world compared to Asia and Africa. Of the 33 studies included, 22 originated from Europe and America, while only 11 were conducted in Asia and Africa [Table/Fig-4]. Specifically, two studies were conducted in India [21,27], with the remaining 31 carried out internationally. Regarding the focus of the studies, 14 examined general OMs, whereas 19 were condition- or area-specific. Among these, six studies addressed the lower back [14,26,32,33,35,36], five focused on stroke [13,15,18,22,29], and one study each investigated cerebral palsy [29], neck [20], sport-related concussion [42], and Intensive Care Unit (ICU)-related outcomes [34] [Table/Fig-5].

## Result of Quality Assessment of the Studies

This study evaluated the collected studies using AXIS. Fourteen of the included studies scored above 16, while the remaining 19 scored between 10 and 15. The highest score achieved in the study was 18, while the lowest score recorded was 12 [Table/Fig-6] [4,13-44].

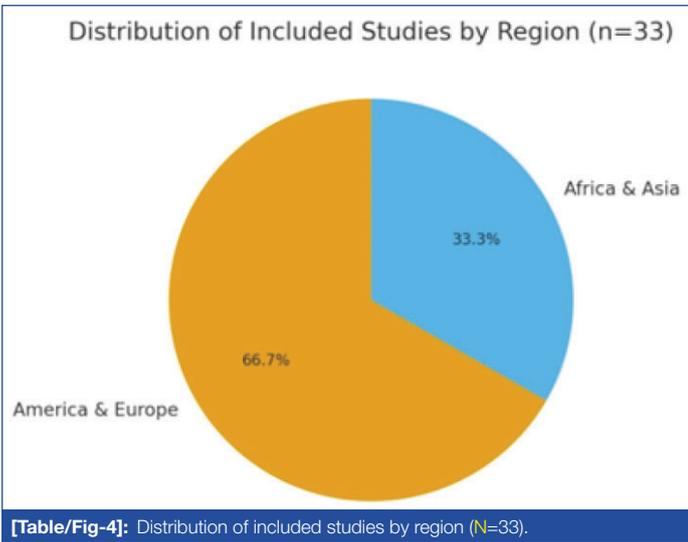
| S. No. | Authors                             | Develop a survey   | Country                   | Sample size   | Survey method  | Axis score | Instrument construction   | Population targeted | Result/Conclusion   |
|--------|-------------------------------------|--|---------------------------|---|--|------------|---|---------------------|---|
| 1      | Salbach NM et al., (2007) [13]      | Supplemented and modified the questionnaire developed by Jette et al., [4] | Canada (Ontario)          | 334   | Mail   | 17         | 1. Practitioner and organisational factors influencing EBP<br>2. Education about EBP<br>3. Attitude, beliefs and interest<br>4. Perceived Peer and Organisational Support<br>5. Demographic and practice characteristics EBP self-efficacy<br>6. items on psychometric properties of outcome measures | Stroke              | Low self-efficacy to perform EBP represents a barrier. EBP for Stroke could be addressed by education.  |
| 2      | Copeland JM et al., (2008) [14]     | Self-development   | New Zealand               | 369   | Mail   | 18         | 1. General characteristics of respondents<br>2. Currently using OM for LBP<br>3. 23 questions on Barriers to OM   | LBP                 | 40% respondents are using back-related OMs. Higher education and knowledge are major contributing factors in using OMs.   |
| 3      | van Peppen RP et al., (2008) [15]   | Self-development   | Netherlands               | 167   | Mail   | 14         | 1. General characteristics of respondents<br>2. OM used for stroke<br>3. Frequency of use OM  | Stroke              | A positive attitude towards the use of OMs (93%) still frequency of using OMs is still less.  |
| 4      | Inglis G (2008) [16]                | Self development   | South Africa              | 168   | Electronic survey  | 16         | 1. Demographic details of respondent<br>2. Awareness and use of OM<br>3. Frequency to use OM  | General             | 84% of respondents are using OMs regularly for effective clinical practice and EBP. Common Barriers are time and knowledge.   |
| 5      | Stokes EK and O'Neill D (2008) [17] | Self development   | Ireland and Canada        | 15  | Structured interview and Mail                                | 15         | 1. General characteristics of respondents<br>2. Awareness and use of OM<br>3. Frequency to use OM<br>4. Level of confidence of respondents  | General             | Increase in use of OMs with time. Lack of time and administrative/ resource support are common hindrance in using OMs   |
| 6      | Jette DU et al., (2009) [4]         | Self development   | USA                       | 498   | Electronic survey  | 14         | 1. General characteristics of respondents<br>2. Awareness and use of OM<br>3. Frequency to use OM<br>4. Facilitators and barriers.  | General             | 48% of respondents using SOMs. Time to administer, analyse and difficulty in completing independently are common barriers. Determining progress, communicating with other, comparing performance are common benefits. |
| 7      | Salbach NM et al., (2011) [18]      | Self development   | Canada                    | 270   | Electronic mail  | 15         | 1. General characteristics of respondents<br>2. Awareness and use of OM<br>3. Frequency to use OM<br>4. Facilitators and barriers.  | Stroke              | Different OMS were used for Stroke (FIM, ChMcMSA, GST, MWT. Moderate number of PTs uses OMs. 80% respondents agreed that clinical practice guidelines should be recommended.  |
| 8      | Swinkels RA et al., (2011) [19]     | Self development   | Netherlands               | 468   | Semi structured Interview and online survey                  | 16         | 1. Literature review<br>2. Facilitators and barriers<br>3. General characteristics<br>4. Top five most common used outcome measures.  | General             | 97% and 72% of PTs working in NH and PP respectively uses OMs. PTs Competency, time, unavailability of feasible OMs are the common barriers. OMs that are easy to apply, score and interpret facilitate its use.      |
| 9      | Maccdermid JC et al., (2013) [20]   | Self development   | 24 countries (44% Canada) | 357 (chiropractic, physiotherapists (32%), manual therapist, physician, other health professionals) | Electronic posting, E newsletter, website, Facebook, twitter | 17         | 1. Patient reported outcomes<br>2. Performance based outcomes<br>3. Utilisation of outcome measures<br>4. Reason for use of outcome measure   | Neck                | Commonly known OMs are used like 75% respondents uses VAS as OMs. There is a need to globally implement consistent use of OMs   |

|    |                                   |   |                |                              |  |    |  |                            |   |
|----|-----------------------------------|---|----------------|------------------------------|--|----|--|----------------------------|---|
| 10 | Mehta S and Grafton K (2014) [21] | Questionnaire design was adapted by Jette et al.,                             | India          | 81                           | Email N=35, Face to face N=46)         | 15 | 1. General characteristics.<br>2. Familiarity with OM.<br>3. Criteria for selecting OM.<br>4. Facilitators and barriers in using OM.<br>5. Reason to use OM.   | Musculoskeletal conditions | 80% of PTs are using impairment-based OMs. Education, work experience and facility settings are noncontributing factors in using OMs. Ease to understand, time in completing, facilitates use of OMs. 75% respondents reported that OMs are time-consuming, difficult and confusing to fill out for patients. |
| 11 | Jang HY et al. (2015) [22]        | Self development  | Korea          | N=382                        | Mail                                   | 17 | 1. General characteristics.<br>2. awareness of balancing factors.<br>3. Perception of Therapist regarding individual assessment tool for assessing balance in stroke.<br>4. Comprehensive awareness of assessment.<br>5. Problem and improvement in stroke. Patient. | Stroke                     | 75.1% respondents use the single-leg stance test, and 52% use the functional reach test. Perception and use of balance measures affected stroke patients' use of personal measures.   |
| 12 | Velez RR et al., (2015) [23]      | A developed questionnaire (Jette et al.,) was adapted by Flores Lopez et al., | Colombia       | N=1064                       | Web page disseminated through internet | 16 | 1. General characteristics of respondents<br>2. Attitude and beliefs to EBP<br>3. Interest and motivation to EBP<br>4. Self reported knowledge to terminology  | General                    | 71.6% showed a positive inclination towards EBP. EBP helps in quality care and decision-making.   |
| 13 | Muqiren TN et al., (2017) [24]    | Questionnaire design was adapted by Jette et al.,                             | Saudi Arabia   | N=180                        | E- survey                              | 16 | 1. General characteristics of respondents<br>2. Perception of standardise outcome measure (benefits and barriers)<br>3. Organisation in clinical setting<br>4. Reason for selecting and non selecting SOM  | General                    | 62% of respondents use OMs. They all perceive that using OMs increases efficiency of examination, help to motivate and encourage Patient However, Time, difficulty to understand OMs, professional experience and education level are common barriers.  |
| 14 | Braun T et al., (2018) [25]       | Supplement and modify the questionnaire developed by Schomberg (2016)         | Germany        | N=595                        | E survey                               | 18 | 1. Therapist attitude and beliefs.<br>2. Skills and knowledge.<br>3. therapeutic environment.  | General                    | OMs are used both in diagnostic (69%) and prognostic (22%). Facilitators encountered are positive attitude and ample knowledge. Barriers are time and financial compensation.   |
| 15 | Osthols S et al., (2018) [26]     | Self development  | Sweden         | N=1217                       | E survey                               | 15 | 1. Questions About different clinical test<br>2. questions about the PROM open ended questions about PROM  | LBA                        | >60% of respondents uses clinical tests as OMs and <15% uses PROM. These facilitate clinical reasoning, motivate and communicate patient better. Barriers encountered were lack of time, knowledge, administrative support.   |
| 16 | Demers M et al., (2019) [27]      | Self development  | Canada & India | N=194 (canada) N=123 (India) | E survey                               | 15 | 1. General characteristics of respondents<br>2. Facilitators and barriers affecting the decision in Neurological assessment<br>3. Perceived rate to use outcome measure  | Neurological conditions    | Indian PTs (97.7%) and Canadian PTs (89.2%) use OMs. Facilitators are validity, reliability of OMs, most recommended OMs in guidelines were mostly used. Barriers are time, unavailability of tool and relying on judgment for clinical decision.   |

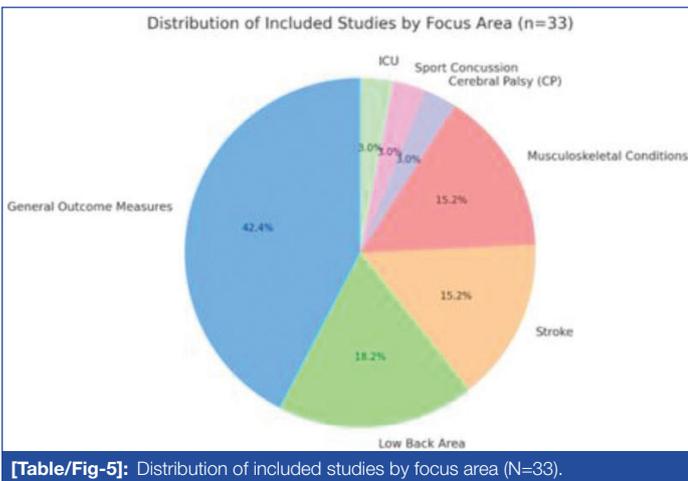
|    |                                      |  |              |  |   |    |  |                                       |   |
|----|--------------------------------------|--|--------------|--|---|----|--|---------------------------------------|---|
| 17 | Knox V et al., (2019) [28]           | Self development   | UK           | N=176 (Peadiatric physiotherapists)              | E survey  | 13 | 1. Frequency to use OM<br>2. Comparison of OM in CP children   | Cerebral palsy                        | 85% of respondents use OMs. In GMFCS of CP grading between I-III (great ease) and grading IV-V (most difficult)   |
| 18 | Agyenkwa SK et al., (2020) [29]      | Self development   | Ghana        | N= 120   | E survey  | 14 | 1. General characteristics of respondents<br>2. Frequency to use OM<br>3. Commonly used OM                                       | Stroke                                | 47.6% of respondents are using OMs. Aging decreases the use of OMs. Physiotherapists managing fewer patients are more likely to use outcome measures.   |
| 19 | Meerhoff GA et al., (2020) [30]      | Supplement and modify the questionnaire developed by Swinkel | Netherlands  | N=444  | E survey  | 14 | 1. General characteristics of respondents<br>2. Self reported use of PROM  | General                               | Common factor are EHR to support PROM. Respondents reported the use of PROM as Self report (21.6%) and EHR (29.8%).   |
| 20 | Brown-Taylor L et al., (2020) [31]   | Self development   | USA          | N=914 (physicians =311, physical therapist =603) | E survey  | 18 | 1. General characteristics of respondents<br>2. question about PROM, special test, clinical test, assessment areas               | General and Non arthritic hip disease | Physical therapists were likely consider movement assessment are important for evaluation   |
| 21 | Knoop J et al., (2020) [32]          | Self development   | Netherlands  | N=85   | E survey  | 17 | 1. General characteristics of respondent.<br>2. use a PROM an effective diagnostic tool for patient with acute low back pain     | LBP                                   | 98% of physiotherapists were using any or many OMs. Quebec back pain disability scale (64%) and start back screening tool (65%) were commonly used.   |
| 22 | Alhowimel A et al., (2021) [33]      | Self development   | Saudi Arabia | N=156 (physicians= 45, physiotherapists =111)    | E survey  | 12 | 1. General characteristic of respondent.<br>2. Commonly used PROM with LBA<br>3. Attitude, belief, knowledge about OM            | LBA                                   | 91% of PTs uses OMs. NPRS and VAS as most commonly used OMs. Lack of Arabic version of OMs as barrier   |
| 23 | Hiser S et al., (2022) [34]          | Self development   | USA          | N=20   | Focus group interview                               | 12 | 1. General characteristics of respondents.<br>2. Five themes were evaluated.<br>3. Three physical function measures (OMs)in ICU. | ICU                                   | 79% of respondents were < 30 years of age. >90% showed positive attitude towards all three OMs  |
| 24 | Hall A et al., (2022) [35]           | Self development   | Canada       | N=76   | E survey  | 12 | 1. Clinical profile of respondents<br>2. Frequency to use OM<br>3. Use of PROM   | LBP                                   | NPRS most commonly used OMs in comparison to disability OMs.  |
| 25 | Otero-Ketterer E et al., (2023) [36] | Self development   | Spain        | N= 484   | E survey  | 15 | 1. General characteristic<br>2. Ten question assessing PROM related to psychosocial factors                                      | LBA                                   | 8Only 13.8% of respondents using OMs in LBA. out of these on 6.8% uses Standardised OMs (Tampa scale, PCS)  |
| 26 | Pathak A et al., (2023) [37]         | Self development   | Nepal        | N=278  | Mixed method<br>E survey<br>Focused group interview | 15 | 1. Themes based on CFIR framework.<br>2. Barriers and facilitators for outcome measures.   | General                               | Facilitator was mandating OM use through regulation at organisational and national level. Barriers were time, lack of OMs in local language, inability to follow up and organisational culture.   |
| 27 | Lim JH et al., (2023) [38]           | Self development   | Korea        | N=106  | E survey  | 16 | General characteristics, whether use OM, benefits and barriers to OM, reason for not using OM                                    | General                               | 73.2% respondents reported the importance of OMs but only 50.8% uses OM voluntarily. 57.3% uses both PROM (10.8%) and PBOM (31.9%) are mostly used. Facilitator are OMs improves communication and motivate patients Barriers are time, uncooperative patients. |

|    |                                     |                  |                   |                                       |          |    |  |                            |   |
|----|-------------------------------------|------------------|-------------------|---------------------------------------|----------|----|--|----------------------------|---|
| 28 | Sawadogo A et al., (2024) [39]      | Self development | Sub Sahara Africa | N=241                                 | E survey | 14 | 1. General characteristics<br>2. facilitators and barriers to use SOM.<br>3. reason to use OM and commonly used SOM                    | General                    | 99% of respondents were using OMs but only 27% uses them all the time. Facilitator like recognised OMs improves communication. Barriers were time, unavailability of SOM, Non sensitive to culture and ethnicity. Middle aged(30-40) used OMs more conversely PTs working in public and private sectors used less OMs.  |
| 29 | Chiwaridz M et al., (2024) [40]     | Self development | Namibia           | N= 253 (physiotherapists and interns) | E survey | 14 | 1. General characteristics of respondents<br>2. Factors associated with routine use of SOM   | General                    | 49% of respondents used OMs routinely. Utilisation of SOMs was more with clinical specialty and females. Facilitators were global policies and professional guidelines. Barriers were time, lack of knowledge and language  |
| 30 | Santos R et al., (2024) [41]        | Self development | Portugal          | N= 156                                | E survey | 16 | 1. General characteristics of respondents.<br>2. Use of PROM, barriers and facilitators to use PROM based on themes.                   | Musculoskeletal conditions | 55% of participants using OMs often or regular. PTs working in private and mixed sector are more likely to use OMs, comparing to those working in Public sector. Encountered barriers were PTs skills, patient characteristics, working conditions and limitations of OMs. Common facilitators were PTs knowledge, active participation of patients, PTs availability |
| 31 | Almansour AM et al., (2024) [42]    | Self development | Saudi Arabia      | N=83                                  | E survey | 13 | 1. General characteristics of respondents.<br>2. Participants summary on case scenario   | Sports concussions         | All the participants reported to have good knowledge, positive attitude and belief toward concussion injuries. 83% and 65% were aware about neurocognitive testing and balance respectively.  |
| 32 | Nuttall J et al., (2024) [43]       | Self development | UK                | N=60                                  | E survey | 17 | 1. Demographic and experience of PTs<br>2. PROM use, facilitators and barriers to use PROM   | Distal Radius fracture     | 38% PTs used Quick DASH followed by 20% PRWE and 53% didn't use any OMs. Common facilitators were ease to score, understand and complete and that were related to DRF Encountered barriers were time, no clinical reasoning and non relevant.   |
| 33 | van den Berg DJ et al., (2024) [44] | Self development | Netherlands       | N=166                                 | E survey | 14 | 1. General characteristics.<br>2. Frequency Of HOOS and KOOS administration.<br>3. frequency of not using HOOS and KOOS administration | Hip and knee arthroplasty  | 78% administered HOOS and 50% KOOS. Organisational requirements, guidelines, diagnosis, treatment evaluation and patient education were common reason to use these. Irrelevancy and no importance for clinical decision making were common barriers   |

[Table/Fig-3]: Characteristics of studies included [4,13-44].



[Table/Fig-4]: Distribution of included studies by region (N=33).



[Table/Fig-5]: Distribution of included studies by focus area (N=33).

|                                      |    |
|--------------------------------------|----|
| Hall A et al., (2022) [35]           | 12 |
| Otero-Ketterer E et al., (2023) [36] | 15 |
| Pathak A et al., (2023) [37]         | 15 |
| Sawadogo A et al., (2024) [39]       | 14 |
| Chiwaridz M et al., (2024) [40]      | 14 |
| Almansour AM et al., (2024) [42]     | 13 |
| van den Berg DJ et al., (2024) [44]  | 14 |

[Table/Fig-6]: AXIS scoring of studies [4,13-44].

## DISCUSSION

The present scoping review synthesised the global evidence on physiotherapists' use of OMs and the factors influencing their implementation in clinical practice. Approximately 6,000 physiotherapists across diverse clinical settings worldwide were evaluated. Overall, the findings indicate variation in OM utilisation, shaped by differences in regional practices, training and healthcare systems. Consistent with earlier reviews, knowledge gaps, cost, inadequate training, patient cooperation, limited training, time constraints and perceived lack of clinical relevance present as major barriers [4,14,17,19,29], while familiarity, ease of administration, scoring and positive professional attitude facilitate routine use [4,15,16,21,30]. These findings indicate that physiotherapists' engagement with OMs is influenced not only by personal knowledge and skills but also by organisational and systemic factors.

A key observation is the pronounced geographical imbalance: most studies originated from Western countries, whereas Asia and Africa remain sparsely represented. Only two studies were conducted in India [21,27], despite a large physiotherapy workforce. This uneven distribution parallels concerns raised in previous literature, suggesting that current evidence may inadequately reflect the experience of clinicians in low and middle income settings. Consequently, the global generalisability of findings remains limited. Importantly, gaps were identified in both the scope and geographical distribution of research. Certain clinical conditions, such as ICU-related outcomes, sport-related concussion, and cerebral palsy, were sparsely explored [34,42], while several other areas remain completely unexamined, highlighting important directions for future research.

Almost half of the included studies indicated that more than 60% of respondents reported using OMs in their clinical practice, with usage rates ranging from as low as 20% to as high as 90%. Some studies noted very limited utilisation of OMs [36], while others demonstrated a marked increase in their use over time within the same cohort [17], suggesting gradual improvement in clinical adoption. The review identified a broad range of OMs, including general, condition-specific, performance-based, and patient-reported OMs (PBOMs and PROMs). While early studies focused predominantly on awareness and general use of OMs [4,13-19] more recent studies (2013-2024) emphasised PROMs and PBOMs [20,26,30-33,35,36,41,43], reflecting a growing emphasis on patient-centered care and evidence-based practice. This trend aligns with the increasing focus on assessing treatment effectiveness, reducing disability, and improving quality of life.

All studies reported general participant characteristics, including age, gender, education, and clinical experience. Most physiotherapists using OMs held at least a bachelor's degree, although several studies found no direct association between higher education or experience and OM usage. Age and workplace setting influenced OM use; for example, Ghanaian physiotherapists over 40 years were less likely to use OMs than younger colleagues [29], while another study reported that workplace setting did not significantly affect OM usage [21]. Conversely, physiotherapists working in the public sector and nursing home settings demonstrated higher use of OMs compared to those in private practice [19,29].

Survey methods varied widely, with the majority of studies employing self-developed electronic questionnaires. Only a small proportion adapted

| Study                               | AXIS score |
|-------------------------------------|------------|
| Salbach NM et al., (2007) [13]      | 17         |
| Copeland JM et al., (2008) [14]     | 18         |
| Inglis G (2008) [16]                | 16         |
| Swinkel RA et al., (2011) [19]      | 16         |
| Maccdermid JC et al., (2013) [20]   | 17         |
| Jang HY et al., (2017) [22]         | 17         |
| Velez RR et al., (2015) [23]        | 16         |
| Muqiren TN et al., (2017) [24]      | 16         |
| Braun T et al., (2018) [25]         | 18         |
| Brown-Taylor L et al., (2020) [31]  | 18         |
| Knoop J et al., (2020) [32]         | 17         |
| Lim JH et al., (2023) [38]          | 16         |
| Santos R and Pires D, (2024) [41]   | 16         |
| Nuttall J and Rolls C, (2024) [43]  | 17         |
| van Peppen RP et al., (2008) [15]   | 14         |
| Stokes EK and O'Neill D (2008) [17] | 15         |
| Jette DU et al., (2009) [4]         | 14         |
| Salbach NM et al., (2011) [18]      | 15         |
| Mehta S and Grafton K (2014) [21]   | 15         |
| Östhol S et al., (2018) [26]        | 15         |
| Demers M et al., (2019) [27]        | 15         |
| Knox V et al., (2019) [28]          | 13         |
| Agyenkwa SK et al., (2020) [29]     | 14         |
| Meerhoff GA et al., (2020) [30]     | 14         |
| Alhowimel A et al., (2021) [33]     | 12         |
| Hiser S et al., (2022) [34]         | 12         |

validated tools, and few studies assessed evidence-based practice comprehensively [13,19,23]. The AXIS quality appraisal showed that most studies scored between 10 and 18, reflecting moderate to high methodological quality, though limitations such as small sample sizes in some studies and reliance on self-reported data were noted.

Understanding these contextual factors is essential to identify unique challenges and enablers that shape clinical practice, promote culturally and linguistically appropriate OMs, and ultimately enhance the global applicability and equity of physiotherapy research and practice. Improving clinician training, integrating OMs into organisational processes, and developing validated, standardised survey tools should be priorities. Future research must focus on region-specific and condition-specific investigations to strengthen global understanding and practical implementation of OMs.

### Implications for Future Research

Future research should prioritise region-specific and culturally relevant studies, particularly in Asia, Africa, and other underrepresented regions. Development and validation of standardised survey instruments to reduce methodological variability and condition-specific and setting-specific investigations, especially in areas where evidence remains limited.

Implementation-focused research should explore strategies to improve OM uptake, including digital tools, training models, and organisational interventions.

### Limitation(s)

The web search was confined to only two databases, which may have limited the comprehensiveness of the review. Additionally, including only observational studies is a methodological limitation because such designs primarily describe associations rather than establish causality. The restriction to English-language publications might have led to the exclusion of relevant non-English studies. Furthermore, the predominance of cross-sectional survey designs restricted the ability to draw causal inferences or assess changes in outcome measure usage over time. Publication bias must also be acknowledged, as studies with positive or significant findings are more likely to be published than those with null results. Although well documented in health research, its potential impact on this review cannot be excluded, as unpublished and non-English studies were not included. This limitation may have led to an overrepresentation of favourable findings, underscoring the need for cautious interpretation of the results.

### CONCLUSION(S)

The present scoping review provides a comprehensive overview of current practices regarding the use of OMs by physiotherapists, highlighting key trends, facilitators, and barriers, as well as important gaps in research. However, persistent barriers, methodological heterogeneity, and limited research in specific regions and conditions emphasise the need for more standardised, rigorous, and contextually relevant studies to support physiotherapist evidence-based practice worldwide. Addressing these gaps can inform future research, clinical practice, and policy development aimed at enhancing evidence-based, patient-centered physiotherapy care.

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**PARTICULARS OF CONTRIBUTORS:**

1. Research Scholar, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.
2. Assistant Professor, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.
3. Research Scholar, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**

Dr. Richa,  
Research Scholar, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib-140406, Punjab, India.  
E-mail: richa.phdresearch@gmail.com

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