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Survey on Physiotherapists' Readiness Toward AI-Assisted Rehabilitation Tools

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Abstract:
Background: Artificial intelligence (AI)–assisted rehabilitation tools are increasingly gaining relevance in physiotherapy practice. However, the readiness of physiotherapists to adopt and integrate these technologies remains unclear.
Objective: To assess the awareness, attitudes, perceived benefits, barriers, and overall readiness of physiotherapists toward AI-assisted rehabilitation tools.
Methodology: A descriptive cross-sectional survey was conducted among practicing physiotherapists in India using a structured Google Forms questionnaire. Participants were selected using convenience sampling. The survey assessed demographic details, knowledge of AI tools, usage patterns, perceived advantages, barriers, and readiness for adoption using a 5-point Likert scale. Descriptive statistics (mean, SD, frequency, percentage) were used for data analysis.
Results: A total of 214 physiotherapists participated. About 72.8% were aware of AI-assisted rehabilitation tools, but only 18.7% reported using them in clinical practice. The mean readiness score was 3.62 ± 0.84, indicating moderate readiness. Major perceived benefits included improved patient monitoring (82.7%) and objective outcome tracking (78.9%). Major barriers were lack of training (67.3%), cost concerns (58.4%), and uncertainty about accuracy (41.1%).
Conclusion: Physiotherapists demonstrate high awareness but limited use of AI-assisted rehabilitation tools. Overall readiness is moderate, and significant barriers persist.

Keywords
Artificial intelligence, Rehabilitation, Physiotherapist, Artificial intelligenceassisted rehabilitation tools, awareness, attitudes, perceived benefits, barriers

Introduction
Artificial intelligence (AI) is rapidly reshaping the landscape of modern healthcare. Its ability to analyse large amounts of data, assist in decision-making, and provide real-time insights has made it a valuable tool across various medical specialties. In physiotherapy, the introduction of AI-assisted rehabilitation toolssuch as wearable motion sensors, mobile applications, robotic devices, and predictive analytics platformshas opened new possibilities for improving patient assessment and treatment outcomes. These technologies allow therapists to monitor progress more objectively, enhance patient participation, and support remote rehabilitation, which has become increasingly important since the COVID-19 pandemic.
While physiotherapy traditionally depends on hands-on assessment and therapist-led interventions, AI tools offer an additional layer of support by providing automated measurements, real-time feedback, and data-driven recommendations. However, the successful integration of these tools depends heavily on the readiness and willingness of physiotherapists to adopt them. Awareness, confidence, perceived usefulness, accessibility, and training all play key roles in shaping adoption behaviour.
Although AI-based rehabilitation tools are advancing rapidly around the world, their adoption in India appears inconsistent. Differences in clinical setup, financial resources, training exposure, and technological infrastructure may influence how physiotherapists perceive and use AI in their daily practice. Concerns regarding reliability, ethical implications, data safety, and the fear that technology may overshadow human expertise also contribute to hesitation among clinicians.

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Despite the rising interest in digital health, very few studies have explored how prepared Indian physiotherapists are to integrate AI into rehabilitation. Understanding their awareness, perspectives, and concerns is essential for planning training programs, updating curricula, and ensuring that AI tools are designed to meet real clinical needs.
Therefore, this study aims to address this gap by examining physiotherapists' awareness, perceived benefits, barriers, and overall readiness toward adopting AI-assisted rehabilitation technologies.

Aim

To assess the readiness of physiotherapists toward adopting AI-assisted rehabilitation tools.

Objectives

1. To measure physiotherapists' awareness and usage of AI-assisted rehabilitation tools.
2. To identify perceived benefits and barriers toward AI integration.
3. To determine overall readiness levels among physiotherapists

Methodology

- Study Design- Descriptive cross-sectional survey.
- Participants- physiotherapists across India
- Sampling Technique- Convenience sampling
- Sample Size- 214 physiotherapists
- Data Collection Tool- A structured questionnaire administered via Google Forms.
  Sections included:
  Demographics
  Awareness and usage
  Perceived benefits
  Perceived barriers
  Readiness scale (5-point Likert)

Results

Table 1: Participant Demographics

Variable	Category	Frequency	Percentage
Gender	Male	98	45.8%
	Female	116	54.2%
Qualification	BPT	132	61.7%
	MPT	70	32.7%
	PhD	12	5.6%
Experience	< 5 years	84	39.2%
	5–10 years	78	36.4%
	>10 years	52	24.3%
Area of Practice	Musculoskeletal	102	47.7%
	Neuro	52	24.3%
	Cardiorespiratory	28	13.1%
	Pediatrics	20	9.3%
	Sports	12	5.6%

Table 2: Awareness and Usage of AI Tools

Parameter	Response	Percentage
Awareness of AI-assisted rehab tools	Yes	72.8%
	No	27.2%
Usage in clinical practice	Yes	18.7%
	No	81.3%
Readiness score (Mean ± SD)	—	3.62 ± 0.84

Table 3: Perceived Benefits of AI Tools

Benefit	Percentage
Improved patient monitoring	**82.7%**
Objective outcome tracking	**78.9%**
Time efficiency	63.1%
Enhanced patient engagement	58.2%
Better documentation	52.4%

Table 4: Perceived Barriers

Barrier	Percentage
Lack of training	67.3%
High cost	58.4%
Concerns about accuracy	41.1%
Fear of reduced clinician control	29.4%
Poor technological infrastructure	26.1%

Table 5: Readiness Distribution

Readiness Level	Score Range	Percentage
Low	1–2.5	18.4%
Moderate	2.6–3.9	**56.1%**
High	4.0–5.0	25.5%

Discussion

This study highlights an important insight into the evolving role of technology in physiotherapy practice. While most physiotherapists in India are aware of AI-assisted rehabilitation tools, very few have had the opportunity to use them in their daily clinical work. This gap reflects a broader trend seen in other countries as wellinterest in AI is high, but real-world use remains limited due to practical constraints.

One of the most encouraging findings is that physiotherapists clearly recognize the potential advantages of AI, particularly in enhancing patient monitoring and providing objective measurement of progress. These benefits align with global trends, where digital tools are increasingly used to support data-driven rehabilitation. Objective tracking can help clinicians better evaluate outcomes, adjust treatment plans, and improve communication with patients.

However, the readiness to adopt these technologies is hindered mainly by a lack of training. Many physiotherapists may not have been exposed to AI tools during their professional education, leading to uncertainty or discomfort with integrating them into practice. This is consistent with previous

studies showing that clinicians often feel insufficiently equipped to handle emerging technologies without proper guidance or hands-on experience.

Cost remains another important barrier, especially in smaller clinics or resource-limited settings. AI-driven devices and software can be expensive, making them difficult to access without institutional support. Furthermore, concerns about the accuracy and reliability of AI systems reflect an underlying scepticism toward machine-generated data. This highlights the importance of developing trustworthy, validated tools that enhance rather than replace clinical judgment.

Despite these challenges, the moderate overall readiness observed in this study suggests a willingness to embrace AIwith the right support. Investing in training programs, integrating AI education into physiotherapy curricula, and developing affordable, user-friendly AI solutions could significantly increase adoption rates. Creating awareness about ethical use, data protection, and the supportivenot substitutiverole of AI may also help build confidence among clinicians.

In summary, physiotherapists in India are optimistic about the potential of AI but require structured training, financial support, and reliable tools to fully integrate these technologies into practice. Future studies could explore organizational readiness, patient awareness, and long-term outcomes of AI-assisted physiotherapy interventions.

Conclusion

Physiotherapists in India show strong awareness of AI-assisted rehabilitation tools, but their use in day-to-day clinical practice is still limited. While clinicians recognize the benefits of AIsuch as better monitoring and objective assessments, the lack of training, high cost, and concerns about accuracy pose significant challenges. Overall readiness is moderate, suggesting that with appropriate training and affordable access to technology, adoption of AI in physiotherapy could increase substantially. Addressing the identified barriers will be crucial in ensuring smooth integration of AI into rehabilitation practice.

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