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Can Chatbots Enhance Patient Education in Musculoskeletal Disorders? A Pakistani Perspective

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Dear Editor!

Advancements in the field of artificial intelligence, AI chatbots, and telehealth represent a significant role in healthcare. Digital rehabilitation has increasingly been recognized for its potential to enhance patient education, particularly for managing musculoskeletal (MSK) disorders. This emphasized the purpose of AI-powered chatbot agents to support patient engagement and self-management.¹ While a study was concerned with ethical considerations essential for the application of AI in telehealth practice.² Likewise, more studies identify and summarize the components of digital health interventions, mobile health apps, and virtual rehabilitation platforms development methods to improve patient adherence to therapeutic regimens.^{3,4,5}

The burden of MSK disorders is rising in Pakistan, particularly in rural regions where limited access to physiotherapy and patient education is available. Where physiotherapy services are not readily available. Due to workforce shortages, long travel distances, and socioeconomic barriers, conventional methods of care often fail to access these populations. AI-driven innovative chatbots can deliver education, promote adherence, and empower patients through easily accessible digital interfaces at low cost. Evidence from other international studies indicates that appropriate development in telehealth-based rehabilitation apps to enhance satisfaction, continuity of patient care, and treatment.^{6,7,8} Limited varying level of digital literacy, inadequate internet access, and the absence of cultural and language barriers restricts chatbot implementation in low-resource settings. Ethical considerations in handling patient-

sensitive information and data privacy must be addressed before large-scale adoption. To bridge these gaps, future research in Pakistan should focus on developing language language-friendly, culturally appropriate chatbot-designed system. A good collaboration is needed with physiotherapists and AI developers. Standardized evaluation to promote equitable healthcare outcomes to ensure safe and effective integration into MSK care. AI-assisted tools hold immense potential to revolutionize patient education to better understand their conditions and treatment options in MSK rehabilitation. With proper culture adaptation, such innovations could enhance self-efficacy, reduce healthcare approach barriers, and strengthen physiotherapy services across Pakistan.

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