ABSTRACT

Background

Academic physiotherapy departments in India continue to rely predominantly on paper-based systems for patient registration, documentation, appointment scheduling, progress tracking, and interdepartmental communication. Such manual systems often contribute to fragmented documentation, delayed retrieval of clinical records, inconsistent data recording, and administrative inefficiencies. Despite the increasing national emphasis on healthcare digitization under initiatives such as Digital India and the Ayushman Bharat Digital Mission (ABDM), adoption of physiotherapy-specific digital workflow systems within university-based rehabilitation settings remains limited. Therefore, there is a growing need for discipline-specific digital platforms designed according to the operational and educational requirements of physiotherapy departments.

Aim

The study aimed to design and develop a prototype web-based digital physiotherapy management system tailored to the workflow requirements of an academic physiotherapy department and to conduct preliminary usability-oriented evaluation through workflow simulation and expert feedback.

Methodology

This study was conducted as a prototype development and usability evaluation study at the Department of Allied Health Sciences, Brainware University, Barasat, West Bengal, India. Requirement analysis was performed through workflow observation, stakeholder discussions, and review of existing documentation practices. The prototype interface was designed using HTML5, CSS3, Bootstrap 5, JavaScript, and React.js. Planned backend architecture included Node.js and relational database integration for future scalability. Preliminary evaluation involved workflow simulation exercises, System Usability Scale (SUS) assessment, interface evaluation, and expert feedback collection from faculty members, students, and administrative staff.

Results

The developed prototype demonstrated favorable usability and workflow compatibility during simulation-based evaluation. Participants reported that structured digital documentation templates improved organization and accessibility of clinical information compared to conventional paper-based methods. The mean System Usability Scale score

indicated above-average usability. Faculty members and student clinicians reported positive perceptions regarding interface clarity, ease of navigation, documentation structure, and potential utility in academic physiotherapy workflow management. Expert reviewers considered the system clinically relevant and suitable for further refinement and future deployment.

Conclusion

The present study successfully developed a prototype digital physiotherapy management platform specifically tailored to the workflow requirements of an academic physiotherapy department. Preliminary usability-oriented evaluation demonstrated encouraging user acceptance, workflow compatibility, and interface feasibility. The findings support the potential for future large-scale development, backend integration, cloud deployment, and multicentric implementation studies within academic rehabilitation settings.

Keywords

Digital physiotherapy management, prototype development, usability evaluation, academic physiotherapy, electronic documentation, rehabilitation informatics, workflow simulation, healthcare digitization

TABLE OF CONTENTS

SL NO.	TOPIC	PAGE NO.
1.	ABSTRACT	Vii-Viii
2.	INTRODUCTION	1-4
3.	REVIEW OF LITERATURE	5-7
4.	AIMS AND OBJECTIVES	8-10
5.	MATERIALS AND METHODS	11-23
6.	STATISTICAL ANALYSIS	24-27
7.	RESULTS	28-35
8.	DISCUSSION	36-39
9.	CONCLUSION	40-42
10.	LIMITATIONS & RECOMMENDATION	43-44
11.	REFERENCES	45-48
12.	ANNEXURES	49-52