

Evaluating the Effectiveness of Telerehabilitation on Pain Management and Functional Mobility in Post Caesarean Delivery: Randomised Controlled Trial

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ABSTRACT

Introduction: Caesarean Section (CS) is one of the most performed surgical procedures globally, with rising rates particularly in developing nations. Despite its necessity, CS is associated with significant postoperative complications, including pain, immobility, and delayed functional recovery, which impair maternal independence and quality of life. While physiotherapy has demonstrated efficacy in post CS rehabilitation, scalable and structured tele-rehabilitation protocols for this population remain largely unexplored.

Aim: To evaluate the effectiveness of a 6-week structured telerehabilitation programme on pain management, functional independence, disability, and patient satisfaction in post-caesarean women compared to standard postoperative physiotherapy care.

Materials and Methods: A randomised controlled trial was conducted at MGS-MASSH Super Speciality Hospital, New Delhi, with 46 post-caesarean women (n=23 per group) aged 20-40 years, recruited 72 hours after delivery. The interventional group received a progressive 6-week telerehabilitation protocol (3 sessions/week), while the control group received conventional in-hospital physiotherapy until discharge. Outcome measures, including the Visual Analogue Scale (VAS), Katz Activities of Daily Living Index (KATZ ADL), Oswestry Disability Index (ODI), and Patient Satisfaction Questionnaire-18 (PSQ-18), were assessed at baseline, 3rd week,

and 6th week. Nonparametric tests (Friedman test, Wilcoxon Signed-Rank, Mann-Whitney U) were applied following Shapiro-Wilk normality testing.

Results: Both groups demonstrated statistically significant within-group improvements across all outcome measures (p<0.05). Between-group analysis revealed that by the 3rd week, the experimental group showed significantly better functional independence (KATZ ADL: U=149.5, Z=-2.681, p=0.007) and lower disability (ODI: U=9.0, Z=-5.642, p<0.001), while VAS scores were not yet significantly different (U=197.5, p=0.126). At the 6th week, the interventional group demonstrated significantly superior outcomes for VAS (U=110.0, Z=-3.512, p<0.001), KATZ ADL (U=184.0, Z=-2.573, p=0.010) and ODI (U=0.5, Z=-5.837, p<0.001). PSQ-18 satisfaction scores were significantly higher in the control group across all timepoints, attributable to a baseline advantage (p<0.001).

Conclusion: A structured 6-week telerehabilitation programme is significantly more effective than standard postoperative care in reducing pain and disability and improving functional independence in postcesarean women, supporting its integration into routine maternal healthcare.

Keywords: Caesarean section, Katz Activities of Daily Living Index, Postpartum physiotherapy.

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