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A feasibility of a Digital Therapeutics for Improving Bowel Symptoms in Rectal Cancer Patients: a single-center, single-arm feasibility study

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Background: With colorectal cancer ranking third globally and survival rates increasing, managing long-term complications is crucial. Most patients who undergo Patients undergoing Low Anterior Resection (LAR) often suffer from symptoms such as constipation, fecal incontinence, and urgency, which significantly compromise their quality of life. Although effective exercise interventions exist, they are often limited by constraints for time, location, and cost. This study aimed to evaluate the feasibility of a 6-week app-based home exercise program for rectal cancer patients experiencing bowel symptoms.

Methods: This was a single-center, single-arm feasibility study. 15 adults (aged 19–80) who underwent LAR for rectal or sigmoid colon cancer were recruited. Participants performed a resistance training program for 6-week using only mobile app. Primary outcomes were feasibility indicators, including retention rate, adherence, app usability. Exploratory outcomes included changes in bowel symptoms measured by the EORTC-QLQ-C30 and CR29.

Results: 11 of 15 participants completed the 6-week program, resulting in a retention rate of 73.3%. Exercise program adherence averaged 91.52% and self-monitoring adherence was also high (diet: 92.42%; bowel: 81.17%). In terms of usability, over 70% reported satisfaction and continued-use intention. Regarding preliminary efficacy, while statistical significance (p=0.05) was not reached, consistent improvement trends were observed. The total bowel symptom score decreased from 40.29±15.77 to 35.40±19.05 (p=0.068). Notably, the group aged 60 years or older showed a relatively greater degree of improvement. In body composition, skeletal muscle mass also showed a positive increasing trend (p=0.076).

Conclusion: This digital intervention home exercise program is feasible and highly acceptable. This indicates that mobile apps alone can deliver exercise interventions to patients without constraints of time, location, or cost, providing improved accessibility. These findings provide foundational data to support future large-scale, long-term randomized controlled trials.

Keywords

Rectal cancer, Bowel symptoms, Digital therapeutics, Exercise intervention

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

Author: Ms KIM, Hye Yeon (Yonsei University)

Co-authors: PARK, Dong Hyuk (Yonsei University); HONG, Ji Young (Yonsei University); MOON, Jun Hyung (CHA University); Prof. JEON, Justin Y. (Yonsei University); Prof. LEE, Kyoung Woo (Yonsei University); PARK, Seo Yeon (Yonsei University); Prof. YANG, Seung Yoon (Yonsei University); YEON, Su Jin (Yonsei University)

Presenter: Ms KIM, Hye Yeon (Yonsei University)

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